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**FINAL DRUM REMOVAL REPORT
TORCH LAKE DRUM REMOVAL
HOUGHTON COUNTY, MICHIGAN**

March 24, 1992

Prepared For:

**Universal Oil Products Co, Inc.
Quincy Mining Company
Quincy Development Corp.
Houghton County Department of Public Works
Superior Crafts, Inc.
Rudolf Kump**

Prepared By:

**Geraghty & Miller, Inc.
75 E. Wacker Drive, Suite 1100
Chicago, Illinois 60601
(312) 263-6703**

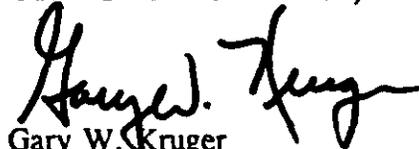
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Geraghty & Miller, Inc. is submitting this report to Universal Oil Products Co., Inc., Quincy Mining Company, Quincy Development Corp., Houghton County Department of Public Works, Superior Crafts, Inc., and Rudolf Kump for work performed at the Torch Lake Superfund Site in Houghton County, Michigan. Based on personal knowledge and appropriate inquiries of all other persons involved in the preparation of the report, the undersigned certify that the information submitted is true, accurate and complete to the best of our knowledge and belief. If you have any questions or comments concerning this report, please contact one of the individuals listed below.

Respectfully Submitted,

GERAGHTY & MILLER, INC.



Gary W. Kruger
Project Engineer/Chemical



Richard E. Bartelt, P.E.
Vice President
CERCLA Services Manager

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1.0 INTRODUCTION

On behalf of Universal Oil Products Co., Inc., Quincy Mining Company, Quincy Development Corp., Houghton County Department of Public Works, Superior Crafts, Inc., and Rudolf Kump ("Respondents"), Geraghty & Miller, Inc. has developed this Final Drum Removal Report to summarize the drum removal, characterization, and disposal activities that were initiated in the Summer of 1991 at the Torch Lake Superfund Site in Houghton County, Michigan and completed on February 11, 1992. This Final Drum Removal Report summarizes the actions taken pursuant to the United States Environmental Protection Agency (USEPA) administrative order by consent (the Order) dated July 30, 1991, and received by the Respondents on August 7, 1991.

The Order included requirements that the Respondents conduct on-land and underwater search activities for drums known or suspected to exist at specific areas along the western shoreline of Torch Lake, sample the drums encountered, and appropriately dispose of all drums found to contain hazardous materials. The Respondents have successfully completed these activities using USEPA-approved contractors and subcontractors. All work has been performed under the guidance and approval of the USEPA OSC. The drum removal effort was conducted in accordance with the approved Final Work Plan (G&M, 1991). The activities conducted on-site were protective of human health and the environment during all phases of the removal action and were conducted to minimize costs as consistent with the NCP, the goals of the Order and appropriate EPA guidance.

Included in this Final Report is a description of the following items:

- site background;
- prior drum investigation results;
- activities performed to fulfill the Order; and,
- resources committed to the removal activity.

Also included in this report and attached as appendices are previous USEPA drum sampling results, chain of custody forms, drum sampling data from the removal effort, waste profiles for the drums, transportation manifests, subcontractor contracts, and invoices related to the project to date.

2.0 SITE BACKGROUND

2.1 DRUM SITE LOCATION AND HISTORY

Torch Lake is located in Michigan's Keweenaw Peninsula in Houghton County, Michigan (Figure 1). The lake has a surface area of 2717 acres, a mean depth of 56 feet, a maximum depth of 115 feet, and contains approximately 5.2×10^9 gallons of water (Donahue 1990). The Lake Superior district, in which Torch Lake resides, is the only place in the world where native (elemental) copper has been found in great abundance (Newton et al. 1942). For approximately 100 years, the lake was the site of copper milling and smelting activities, functioning as a source of milling water and a repository for the stampsands (also known as tailings) produced in the copper milling process. The stampsands consist primarily of natural rock that was crushed in the process used to separate the native copper from the associated rock material (Donahue 1990; Rose et al. 1986).

In 1968, the combination of a labor dispute and market conditions forced the closing of the vast majority of the copper mines in the Torch Lake area, and work in the other mines ceased shortly thereafter. Since the closure of the mines, other business unrelated to copper smelting and milling operations has been conducted on or near the western shore of Torch Lake by others not parties to the Order.

In 1983, the Michigan Department of Public Health (MDPH) issued an advisory against the consumption of sauger and walleye from Torch Lake because of a high incidence of fish tumors noted on resident fish in studies conducted in the mid 1970s through the early 1980s. Although no human health effects were associated with the consumption of fish, the

advisory was issued as a preventative measure until the causative factors of the fish tumors could be identified (Donahue 1990).

The MDPH fish advisory remains in effect although data collected during a 1988 fish sampling event demonstrated that the incidence of tumors has returned to normal, strongly suggesting that the liver tumor inducing agents no longer exist in the Torch Lake - Portage Lake fishery (Donahue 1990; MDNR 1989). In addition, a four-month tumor induction study using creosote and xanthate (two chemicals used in the copper separation process) failed to establish a causal relationship between those chemicals and liver abnormalities or fish tumors (Donahue 1990). Recent experiments have indicated that the skin tumors found in the fish at Torch Lake, which are common in walleyes from various waters in the Great Lakes basin and elsewhere, are likely to be viral in origin (Black 1989).

In 1984, the year after the fish advisory was issued, the Torch Lake site was proposed for listing on the National Priorities List (NPL) of toxic waste sites mainly because of the abnormally high incidence of fish tumors that were noted in previous studies (Rose et al. 1986). It is also suspected that the use of southern end of Portage Lake and the South Entry for background soil levels as allegedly being representative of background soil levels for the entire Torch Lake Superfund Site (Donahue 1992) heavily contributed to the proposed listing of the site to the NPL. The site was officially placed on the NPL in June of 1988. The Remedial Investigation and Feasibility Study (RI/FS) process was initiated at the site in October, 1988 to assess any potential environmental concern on the site. The site was broken into three separate areas, called "Operable Units," with each unit to undergo a separate RI/FS. During the course of the RI for Operable Unit I (OU I), which consists of the western shoreline of Torch Lake, USEPA contractors identified a number of drums that

were located in four specific on-land areas and one off-shore area (Figure 2). The four relevant drum location areas are:

- Area 1 - Old Calumet and Hecla smelting mill site near Lake Linden
- Area 2 - Ahmeek Mill site
- Area 3 - Tamarack site
- Area 4 - Quincy site

As a result of the discovery of drums, and after the subsequent USEPA-contractor sampling of the drums (see Section 2.2.3), the USEPA issued an administrative order on consent (the Order) to identify, sample, and remove those drums that are found to contain hazardous substances. The activities described in this Final Report were performed to satisfy the Order for the identification, sampling, removal, and disposal of hazardous-substance drums located in the four areas noted above as well as the applicable adjacent off-shore areas on the western edge of Torch Lake.

2.2 PRIOR DRUM INVESTIGATIONS

Several drum investigations were conducted at the Torch Lake site as part of the RI activities associated with OU I. These activities, which include on-land and offshore geophysical studies as well as several drum sampling events, are described below.

2.2.1 On-Land Geophysical Investigation

A site-wide on-land geophysical investigation was completed as part of the Remedial Investigation of the site. The purpose of the investigation was to locate suspected drum locations within the stampsands which were alleged to exist according to local rumors (Donahue 1989). The USEPA conducted magnetometry and ground penetrating radar (GPR) investigations on the stamp sands during the week of May 8, 1989 to investigate these rumors.

The geophysical survey encompassed three separate areas in OU I and covered over 40 total acres of the site. The areas investigated included the Centerline Apartment site in Lake Linden, the Stamp Mill Site near the old Ahmeek Mill Site, and the Sewage Settlement Pond Site near Tamarack City.

The anomalies found during this investigation were investigated by the USEPA with the construction of a total of ten test pits in the three areas on site during the week of June 3, 1991. None of the ten test pits excavated in the areas showing anomalies revealed buried drums or any other evidences of potentially hazardous materials located beneath the land surface.

2.2.2 Off-Shore Geophysical Investigation

A GPR survey and a subbottom profile (seismic) survey of the lake bottom were also conducted by the USEPA during the week of May 8, 1989. The area in which this survey was conducted is immediately off-shore from the Area 1 drum location. Technical difficulties and equipment limitations hampered both the marine GPR and the seismic survey

(Donahue 1989), but several point targets (possibly drums) were located on the bottom of the lake (USEPA 1989).

A remote operated vehicle (ROV) survey and follow-up dives conducted by the USEPA in this area confirmed the existence of an apparently limited number of submerged drums and other debris. Preliminary results of a USEPA underwater investigation of the off-shore area near Area 1 (see Figure 2) indicated that drums were present below the water line in this area. The number and nature of the objects that appeared to be drums in the underwater videotape generated by the USEPA were not accurately defined, but EPA divers confirmed the existence of underwater drums in this area. The USEPA sampled one of the underwater drums during a dive on May 21, 1991, but the results from this sampling event have not been made available to Geraghty & Miller.

2.2.3 Prior Drum Sampling Events

The USEPA conducted two rounds of on-land sampling of the drums located in four distinct areas on the western shore of Torch Lake, and one round of drum sampling of a single underwater drum adjacent to Area 1. Analyses of the data made available to the Respondents from the USEPA drum sampling programs indicated that of the 17 on-land drum samples collected by USEPA contractors to date, only one of these samples was preliminarily identified as a RCRA hazardous waste due to the presence of F-listed substances. The determination of this drummed material as a RCRA-hazardous waste because of the presence of suspected F-listed solvents may not be accurate, however, because: (1) the former use of the contents of the drum may not be solvent-related, and (2) the date of disposal of the material could have been prior to the promulgation of RCRA regulations. Four additional drum samples collected by USEPA contractors indicated the

presence of hazardous substances, but did not demonstrate the characteristics of a hazardous waste. The results from the underwater drum sampled by the USEPA are unknown.

At least three of the 17 on-land samples collected by USEPA contractors were of drums that contained smelter slag, and the results of the analyses performed on these samples have confirmed that the slag material is not a RCRA-hazardous waste. The non-hazardous nature of the slag is significant, since the vast majority of all the drums found in the areas of concern are filled with slag. The existence of these slag-filled drums is presumed to be part of an engineered erosion protection system and not the result of waste drum deposition.

From a historical perspective, it was not a common practice to place molten slag from the copper smelting process into barrels or drums as a means of slag disposal. Empty barrels were worth money as a salvage material, and the much easier, more logical, and more cost effective means of granulating the slag and transporting it in bulk via a pump or railcar had been developed early in the mining process (Newton 1942). Any molten slag placed into drums or barrels would not have been done as a slag disposal technique, therefore, but as a means to create usable building material.

2.2.3.1 6/21/89 Drum Sampling Results

On June 21, 1989, Weston, Inc., a USEPA contractor, collected a total of eight drum samples from three areas on site (see Appendix A). Three samples were collected from Area 1 along the shoreline, two samples were collected from drums in Area 2, and three samples were collected from Area 4 drums. One drum was analyzed for EP Toxicity metals, total and reactive cyanide, total and reactive sulfide, pH, and flashpoint; all other drum samples in this round were analyzed for volatile organic compounds (VOCs), acid/base-neutral

semivolatile organic compounds (SVOCs), pesticides, PCBs, EP Toxicity metals, and Cyanide.

In general, only traces of volatile and semivolatile organics were found in this round of sampling (Donahue 1990), and none of the samples were considered a RCRA hazardous waste. The only significant detection of hazardous materials (4000 ppm of trichloroethylene) occurred in a drum containing greasy rags located in Area 2. This drum is not suspected to be the result of disposal associated with the mining activities of Calumet and Hecla, and more likely is the result of a recent unauthorized disposal (Donahue 1990).

In this first round of drum sampling, one drum of slag was sampled in Area 2. Only one drum of slag was sampled in this area according to the USEPA contractor because it was believed to be representative of all the slag drums (Weston 1990a). The slag was analyzed for EP Toxicity metals, total metals, volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs, and cyanide. A review of the sampling results as presented in the Final Remedial Investigation (RI) Report for Operable Unit I revealed that the slag was clearly not classified as a hazardous waste as defined by the RCRA characteristic of toxicity.

2.2.3.2 8/1/90 Drum Sampling Results

On August 1, 1990, Weston, Inc., a USEPA contractor, collected a total of nine drum samples from the four drum location areas on site (see Appendix B). Four samples were collected from drums in Area 1 along the shoreline, one sample was collected from a drum in Area 2, two samples were collected from slag drums in Area 3, and two samples

were collected from drums in Area 4. These samples were analyzed for flashpoint, TCLP metals, F-list solvents, VOCs, and SVOCs.

The analytical results indicated that one of the drums sampled in Area 4 contained VOCs that are now considered F-listed hazardous wastes if the material in the drum was formerly used as a solvent. As mentioned previously in this report, USEPA contractors have preliminarily designated this material as an F-listed hazardous waste though this designation may be inappropriate in this instance because the origin and former use of the drummed material is unknown. One other drum in Area 4 was found to contain VOCs that were hazardous substances, as did two of the drums from Area 1 and the drum sampled from Area 2. The drum sampled in Area 2 during this round of sampling was the same drum sampled in the first round of sampling.

Area 3 slag drums were sampled for the first time during this round of sampling. These data from this round of sampling also confirm that the vitrified slag material is non-hazardous (Weston 1990b). Since the copper bearing rock smelted to produce the slag came from the same general geographic region, the slag itself would be expected to be quite homogenous, and the slag found in one drum should be very similar to the slag found in another drum. The homogenous nature of the slag material found in the drums on the site are reflected by the consistently non-hazardous, low extractable metals content of the material tested from several different drums.

3.0 TASK DESCRIPTIONS

This section of the Final Drum Removal Report provides a detailed description of the major tasks undertaken by the respondents in response to the Order. The major tasks discussed in this section of this report include:

- Work Plan Development;
- Underwater Drum Investigation;
- Underwater Drum Removal;
- Terrestrial Drum Removal;
- Drum Sampling;
- Sample Analysis; and,
- Drum Disposal.

3.1 WORK PLAN DEVELOPMENT

Pursuant to the Order, the Respondents instructed Geraghty & Miller to develop and complete a Work Plan to comply with the terms of the Order. Included in the Work Plan was a history of the site, results of USEPA contractor sampling, procedures for drum removal, a preliminary schedule of activities, a Health & Safety Plan and a Sampling and Analysis Plan (G&M 1991).

The Draft Work Plan was submitted to the USEPA on June 27, 1991. Subsequent to review and comment provided by the USEPA OSC, the Final Work Plan was submitted to the USEPA on July 10, 1991.

3.2 UNDERWATER DRUM INVESTIGATION

The underwater drum investigation was the first phase of the field work conducted to satisfy the requirements of the Order. This portion of the investigation was completed during the week of August 12, 1991. The field activities undertaken during this period were performed under the direction and approval of the USEPA OSC. This first phase of field work consisted of a side-scan sonar (SSS) survey of the entire 5-mile length of western shoreline of Torch Lake between Lake Linden and the Quincy Mining property, with a follow-up remote operated vehicle (ROV) underwater camera survey of those areas that potentially contained drums. The methodology and results of the underwater surveys conducted during this reporting period are presented below in chronological order.

Geraghty & Miller, Inc. contracted with Environmental & Marine Services, Inc. (EMS) to perform the underwater activities necessary to fulfill the Order. EMS mobilized on August 13, 1991 and proceeded with the survey on the morning of August 14, 1991.

At approximately 1230 hrs on August 14, 1991, the SSS unit was placed into the water behind the tug boat owned and operated by Julio Contracting of Hancock, Michigan. The SSS unit and recorder were then fine-tuned by EMS personnel on the way to Drum Area 1 near Lake Linden. The SSS survey began at the Lake Linden Public Boat Launch, and proceeded south. The initial SSS survey revealed several targets that appeared to be drums off-shore of Drum Area 1, an area where drums were already known to exist off-shore. The SSS survey continued south at a boat speed of approximately two knots; adjustments and fine-tuning of the SSS system continued during this run.

At approximately 1400 hrs, several additional SSS sweeps of the shoreline adjacent to Area 1 were conducted, followed by an ROV survey offshore of Area 1. This ROV survey confirmed the existence of at least two drums underwater offshore of Area 1.

At 1645 hrs, the final comprehensive SSS survey from the Lake Linden Public Boat Launch to the shores near Tamarack City (on-land Drum Area 3) was conducted. This survey was completed at 1900 hrs. It should be noted that due to the extreme northwestern location of the site within the Eastern Time Zone, it was possible to conduct daylight operations late into the day.

A meeting to discuss the SSS results was held at approximately 2130 hrs with G. Kruger (Geraghty & Miller), W. Nied (USEPA), and D. Gillson (EMS) in attendance. The purpose of the meeting was to discuss the results of the SSS survey completed to date and to make a decision as to what areas were candidates for further ROV investigation. After reviewing the SSS tapes generated during the survey, all parties were in agreement that the SSS survey revealed potential ROV targets offshore of Area 1 and offshore of the current Peninsula Copper Industries, Inc. (PCI) property. The group therefore concluded that the areas offshore of Drum Area 1 and the PCI property would need to be investigated using an ROV to confirm the existence of drums, and that the results of the SSS survey revealed no other areas along the shoreline warranting additional inspection.

At approximately 0900 hrs on August 15, 1991, the SSS search was resumed at the area where it was terminated the day before. The survey was performed along the western edge of the shoreline through the Quincy Mining property (Area 4), completing the extent of the SSS survey. Additional potential targets were noted only in one area that was adjacent to the old Quincy Mining dock. At 1030 hrs, an ROV search was conducted on the suspect

area, and it was determined that the anomalies noted during the SSS survey in the Quincy Dock area were actually caused by miscellaneous non-drum debris (e.g., wooden structures, concrete piping, etc.) No drums were noted in this area.

A detailed follow-up ROV survey of the area offshore of Area 1 commenced at 1240 hrs and was completed at 1710 hrs. This survey consisted of 20 separate runs with the ROV from a depth of approximately 30 feet to the shore line. Numerous pieces of timber and piping debris were noted in this area during the ROV survey, with most of the debris occurring at depths of 18 feet or less. Along with the debris, the ROV survey located 19 objects positively identified as drums, 5 additional objects strongly resembling drums, and an object that appeared to be the shredded remains of a drum. Some of the drums were open-tops with their contents (or lack of contents) visible, and some of the drums appeared to be closed.

The ROV survey off of the PCI property was conducted to the south of the current PCI boat dock in the area adjacent to the wastewater outfall. The survey commenced on August 15, 1991 at 1750 hrs, and was performed in water ranging in depth from 0 to 30 feet.

The ROV survey conducted offshore of the PCI property revealed the existence of miscellaneous debris, fiberglass refuse, and approximately 60 drums. The initial ROV survey of the area and a review of the VHS-format video tape generated during the ROV survey indicates that the drums, fiberglass, and other debris were most likely pushed offshore and were probably not dumped by a boat. The debris line decreases in intensity with depth and the majority of drums and debris are located within a 25-foot depth. The exact contents of all the drums could not be accurately determined, but the ROV survey video tape

revealed that the vast majority of drums off of the PCI property were empty, and that some of the drums contained obviously non-hazardous debris (e.g., fiberglass, wood, etc.) while a few of the drums appear to contain other solid material.

During the August 16, 1991 follow-up meeting and review of the ROV survey videotape, the USEPA OSC indicated that a few of the drums observed immediately offshore of the PCI property were candidates for additional investigation and potential removal and disposal under the Administrative Order on Consent. This review of the videotape suggested that of the drums surveyed, only three to six drums were candidates for potential removal in this area.

3.3 UNDERWATER DRUM REMOVAL

The second phase of the field work conducted to satisfy the requirements of the Order was completed during the period from September 5 through September 11, 1991. The field activities undertaken during this period were performed under the direction and with the approval of the USEPA OSC. This second phase of field work consisted of the overpacking and removal of a total of 20 drums off-shore of the Peninsula Copper Industries, Inc. (PCI) property and off-shore of Drum Area 1. A summary of the drums surfaced and a brief description of the drum contents is presented on page 1 of Table 1.

Geraghty & Miller, Inc. contracted with Environmental & Marine Services, Inc. (EMS) to perform the underwater activities necessary to fulfill the Order. EMS mobilized for the removal on September 4, 1991, and proceeded with the removal activities on the morning of September 5, 1991. Oversight personnel for this second phase of field work consisted of the USEPA OSC, a USEPA Oversight Contractor, and MDNR Personnel.

Divers were used to perform a thorough inspection of the lake bottom in those areas that were determined to house drums based on information from the recent side scan sonar and ROV surveys. A barge and diving platform was used to stage divers as they visually inspected the lake bottom for drums in 12-foot increments. All drums encountered were inspected. Drums that were RCRA empty or those that contained only bottom sediment or other obviously non-hazardous materials were left in place. Drums that contained unknown contents were overpacked and removed to ensure the removal of all drums with potentially hazardous materials encountered in the lake. Decisions to pull or leave individual drums were approved by the USEPA OSC or his designated representative through 2-way communications with the divers.

The final drum count off-shore of the PCI property was 742 empty drums located, and eight (8) drums of unknown solid contents located. The 742 empty drums were all thoroughly inspected by the divers, and the empty nature of the drums in this area was confirmed by the USEPA OSC, the EMS Field Manager, and the Geraghty & Miller Project Engineer by means of a diver-held video camera and an on-board video monitor. All 8 drums with unknown contents were overpacked and removed from this area. Off-shore of Drum Area 1, there were 66 empty drums found and 12 drums of unknown solid contents located. All 12 drums with unknown contents were overpacked and removed from this area.

3.4 TERRESTRIAL DRUM REMOVAL

Geraghty & Miller contracted with the ENRAC division of Chemical Waste Management (CWM) to perform the on-land removal work necessary to fulfill the Order. CWM mobilized on September 16, 1991, and proceeded with the removal activities on the

afternoon of September 17, 1991. A summary of the drums removed and a brief description of the drum contents is presented on pages 2 through 6 of Table 1.

At 1450 hrs on September 17, 1991, the on-land drum removal commenced at Area 4 near Mason. In addition to several drums already known to exist in a wooded area on this site, a thorough search of the area conducted by Geraghty & Miller identified one other drum removal candidate located on a hill immediately to the north of a partially sunken barge. A total of five (5) drums and minor quantities of stained soil were removed and overpacked from Area 4 (four drums were removed from the wooded area and one drum was removed from the section of land to the north of the partially sunken barge).

Area 3, near Tamarack City, has a rip rap wall consisting of concrete and slag-filled barrels that function as an erosion protection barrier providing slope stability for the adjacent Soo Line Railroad and State Highway M-26. The slag in these drums has been tested and was determined to be non-hazardous from previous sampling exercises conducted by USEPA contractors, and thus the drums were not removal candidates. During a thorough search of the area surrounding the rip rap wall, Geraghty & Miller identified a singular drum containing some hardened grease-like material located to the north of the wall. This anomalous drum (and some minor quantities of stained soil) was removed and overpacked.

Area 2, near Hubbell, has a mound of construction debris near which some drums were found. A total of four drums of material were overpacked and removed. One of the four drums removed from this area was an anomalous drum full of greasy rags that was found to contain trichloroethylene (TCE) during previous USEPA sampling events. All of the drums removed from this area appeared to be the product of a recent unauthorized random disposal. Unrelated slag drums that make up an erosion protection barrier in this

area had been tested and determined to be non-hazardous during previous USEPA sampling and were therefore not removal candidates.

The final on-land drum removal location was Area 1 near Lake Linden. A total of 73 overpacks were removed from this area, including 72 drums from the rubble slope descending into Torch Lake and one drum of white gravel-like material removed from a flat area between the rubble slope and the adjacent Copper Mitten store. The drums from the surface of the rubble slope were first removed, revealing additional drums and waste material beneath the first row of drums. Many of the overpacks removed from the site contained only waste material and impacted soil and rock, as many of the drum carcasses had deteriorated. The vast majority of the waste in the drums in Area 1 consisted of a dark colored, light density solid or a very thick black semi-solid.

The excavation in Area 1 continued until all visible drums were located and removed. At the request of the MDNR, several additional backhoe cuts were made into the rubble slope following the removal of the last drum to attempt to locate any other drums that may have existed in the slope. No further drums were located, and the slope was stabilized with brick rip rap to prevent washout of the slope. The removal activities in Area 1 were concluded at approximately 1245 hrs on September 19, 1991.

3.5 DRUM SAMPLING

A total of 20 drums were surfaced from off-shore and 83 drums were pulled from on-land during the Torch Lake Drum Removal effort. The enclosed Drum Summary chart (Table 1) provides an overview of the drums pulled and a brief description of the drum contents.

Following the successful on-land removal of the drums, CWM sampled and staged the drums and debris overpacked during the removal. All drums that were overpacked underwater were first drained of any lake water using a small pump. The water was stored in overpacks on the site and later disposed of in an appropriate manner following sample analyses on the water.

On September 20, 1991, sixteen (16) drum samples were collected from the 103 drums pulled, with at least one sample taken of every waste type. Drums already sampled and characterized by USEPA contractors previous to this removal effort were not resampled. All samples collected from the overpacked drums were analyzed for the following parameters per the approved Work Plan (G&M 1991):

- TCLP Metals
- Target Compound List Volatile Organics
- Target Compound List Semivolatile Organics
- Flashpoint

Eight samples were taken from drums that were removed underwater and eight samples taken from drums collected on the land. The limited number of waste streams present, particularly in the on-land areas, lessened the total number of samples necessary for a representative characterization of the drums. The different drummed waste streams noted off-shore of the PCI property, however, prompted the sampling of six of the eight drums removed in this area. Representative sampling procedures were used following standard engineering practices and all drum sampling procedures were conducted in accordance with the methods outlined in the Final Work Plan as approved by the USEPA OSC for the drum removal effort.

In addition to the samples collected on the drummed material that was removed, one (1) composite sample was collected from the water that was removed from the drums pulled from the lake, and four (4) drums of solid slag were sampled and analyzed for TCLP metals only as per the approved Work Plan (G&M 1991).

Following the sampling of the drums, all overpacked drums containing waste materials were staged in one of two locked semi-trailers located near Drum Area 1. The samples were shipped via UPS Overnight Delivery to Analytica, Inc. for analysis according to the procedures outlined in the approved Work Plan (G&M 1991). Copies of chain of custody forms that accompanied sample shipment are included in Appendix C of this report.

3.6 SAMPLE ANALYSIS

Analyses were performed by Analytica, Inc. of Golden, Colorado using USEPA Contract Laboratory Procedure (CLP) methods. Analytica is a USEPA CLP inspected and approved laboratory. A description of the sampling results is provided below, and the analytical data from the characterization of these drums are included as Appendix D of this report.

3.6.1 Overpacked Drum Results

Sampling results for the characterization of the drummed waste removed per the approved Work Plan are provided below.

3.6.1.1 TCLP Metals Results

The TCLP (Toxicity Characteristic Leaching Procedure) process is an extraction method designed to simulate conditions in a landfill. The waste is subjected to an extraction process with an acidified aqueous mixture, and the extract from this process is then analyzed for a specific set of regulated parameters (including specific metals or organics). If any TCLP-regulated substances exceed the specified regulatory limits in the leachate generated during the TCLP extraction, the subject waste is considered a Resource Conservation and Recovery Act (RCRA) hazardous waste by definition of the Toxicity Characteristic.

In the case of the Torch Lake drum removal effort, regulated metals (inorganics) were analyzed using the TCLP extraction procedure. These analytical results indicate that four (4) drums of waste were RCRA hazardous because they exceeded the TCLP regulated limits for various metals (see Table 2). Overpack drum number TL-001 (sample DS-01) exceeded the TCLP limit for lead; drums TL-002 and TL-004 (samples DS-08 and DS-02, respectively) exceeded the TCLP limit for lead and cadmium; and drum TL-003 (sample DS-03) exceeded the TCLP limit for barium. With these four exceptions, the other 99 drums that were overpacked and removed in the Torch Lake area did not demonstrate the hazardous characteristic of toxicity for metals.

3.6.1.2 Volatile Organic Analysis Results

All of the drums sampled were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs). This analysis yields the total content of individual VOCs within the waste substance. The results of this analysis indicate that 13 of the 16 drums sampled contained some (although relatively minor levels of) VOC content (see Table 3).

Note that only those compounds that were identified in the samples were included in Table 3, and many more compounds were analyzed for but not detected (Appendix D). Further waste profile characterization of the drums for disposal indicated that none of the drums sampled following the removal effort contained VOC levels high enough to be leachable using the TCLP (see Appendix E). The VOC levels within the drums are therefore classified as non-hazardous under RCRA.

3.6.1.3 Semivolatile Organic Analysis Results

All drums sampled were also analyzed for TCL Semivolatile Organic Compounds (SVOCs). This analysis yields the total content of SVOCs within the waste substance sampled. The results of this analysis indicate that 10 of the 16 drums sampled were found to contain detectable quantities of SVOCs (see Table 4). Only those compounds that were identified in the samples were included in this Table 4, and many more compounds were analyzed for but not detected (Appendix D). As with the content of VOCs within the waste sampled, further waste profile characterization of the drums for disposal indicated that none of the drums sampled following the removal effort contained SVOC levels high enough to be leachable using the TCLP (see Appendix E). The SVOC levels within the drums are therefore classified as non-hazardous under RCRA.

3.6.1.4 Flashpoint Analysis

All 16 drums sampled were tested for flashpoint determination (ignitability) to determine if the material was a RCRA hazardous waste based on the characteristic of ignitability. All of the samples yielded no flash to 210° F. The contents of the drums were

therefore well outside of the hazardous regulatory limit of 140° F flashpoint, and are therefore not considered hazardous according to this characteristic.

3.6.2 Slag Drum Results

TCLP metals analyses on the four slag drum samples collected indicate that the drummed slag is non-hazardous for this characteristic (see Table 5). None of the samples demonstrated a leachability of any of the toxic metals that was within an order of magnitude of the TCLP regulatory limit. This confirms the USEPA contractor's previous assessment of these drums of slag as non-hazardous using both the EP-Toxicity procedure and TCLP analysis.

3.6.3 Decanted Water Results

A composite sample of the water that was removed from the underwater drums pulled from the lake revealed only extremely low concentrations of two VOCs and three SVOCs. No other compounds or elements were detected. The sample results were as follows:

<u>Compound</u>	<u>Concentration</u>
Acetone	8 ug/L
Toluene	2 ug/L
Phenol	3 ug/l
4-Methylphenol	3 ug/L
bis(2-Ethylhexyl)phthalate	2 ug/L

These extremely low organic concentrations are most likely the result of laboratory contamination, or could have come from the inside of the overpack where the water was

stored. The decanted water was not hazardous by the characteristic of TCLP metals, nor was it hazardous by the characteristic of ignitability.

3.6.4 Sampling Results Summary

Sixteen (16) samples of the drummed waste were collected to characterize the 20 drums removed from underwater and the 83 drums removed on-land. Analysis of the drums as per the approved Work Plan revealed that only four (4) of the 103 drums pulled contained RCRA hazardous wastes by the toxicity characteristic (leachable metals content). The other 99 drums pulled in this removal effort were not found to be RCRA-hazardous by any of the analyses performed.

All of the drums removed contained some quantity of TCL organics (VOCs or SVOCs), and this is to be expected with any type of petroleum-based product. Many common household, industrial, and building products (e.g., roofing tar, asphalt, automobile grease) are composed almost exclusively of these organic materials. The vast majority of the waste removed appeared to have a wax-like or grease-like appearance, and is best classified as non-hazardous industrial waste.

In addition to the samples taken from the drums overpacked and removed, four (4) drums of slag were sampled and analyzed for TCLP metals. Results of the TCLP analyses on the four drums of slag sampled confirmed the USEPA's prior sampling efforts on this material; the slag within the drums is not RCRA-hazardous.

One (1) composite sample was collected of the water that was decanted from the overpacked drums pulled from the lake. Analyses of this water revealed no significant concentration of any hazardous substance.

3.7 DRUM DISPOSAL

Chemical Waste Management (CWM), the subcontractor for the on-land drum removal effort, was also contracted by Geraghty & Miller to secure disposal for the drums. Disposal capacity for hazardous wastes in the United States was very limited in the fall and winter of 1991. Several major treatment and disposal facilities were temporarily closed during ongoing permitting discussions with the USEPA, and these temporary closures resulted in a temporary shortage of disposal capacity nationwide. This disposal capacity shortage lengthened the time anticipated for final disposal of the material from this removal effort, but through CWM's coordinated efforts to secure proper disposal facilities, preliminary disposal approval for all of the waste was approved in late January 1992. The USEPA OSC was apprised of the disposal delays and scheduling changes throughout the removal and disposal effort.

Geraghty & Miller contacted the USEPA on January 24, 1992, to inform the OSC of the disposal activities and drum consolidation to take place the following week. After securing USEPA OSC approval for the disposal activity, Geraghty & Miller and CWM conducted drum consolidation and removal activities at the site during the week of January 27, 1992.

As a result of the characterization of the drums based on the analytical results, the waste material collected during the Torch Lake Drum Removal effort was classified into four different waste streams. These waste streams are:

- RCRA Hazardous/TCLP Metal waste (4 drums)
- Solvent-like waste (2 drums)
- Non-hazardous decant water (650 gallons)
- Non-hazardous solids (97 drums)

In addition to the characterization of the drums performed by Geraghty & Miller pursuant to the Order, CWM collected samples and analyzed the waste streams for additional parameters to ensure that the waste disposal facilities selected for each waste stream was appropriate. Appendix E contains a copy of the waste profile sheet for each waste stream. These additional analyses indicated that the disposal facilities selected based on the initial characterization were appropriate for all waste streams.

Three different disposal facilities were selected for the four waste streams designated for disposal. Drum handling information and disposal facilities selected for each of the four waste streams are provided below. Copies of transportation manifests are included in Appendix F.

The four drums that were found to be RCRA hazardous due to the characteristic of toxicity for metals were hauled off-site by CWM on January 31, 1992. The four drums making up this stream consisted of Environmental & Marine Services overpack drum numbers TL-001, TL-002, TL-003, and TL-004 that were found to contain material that exceeded the TCLP levels for certain metallic elements (see Tables 1 and 2). These drums

have been stabilized with portland cement to meet land-ban leaching criteria and were placed into Adams Center Landfill in Fort Wayne, Indiana. Adams center is licensed under RCRA as a treatment, storage and disposal (TSD) facility and can accept CERCLA wastes.

The two drums previously characterized by the USEPA as containing solvent-like material were also hauled off-site by CWM on January 31, 1992. Drum TL-1 held a black liquid previously sampled by USEPA contractors that was found to contain materials that may be considered F-listed solvents (a hazardous waste), and drum TL-83 was a drum of greasy rags that was sampled on two occasions by USEPA contractors and was found to contain trichloroethane (TCE). Both of these drums held unique contents not seen anywhere else in the four Torch Lake Drum Removal areas, and may have been deposited as the result of a more recent unauthorized disposal. Since these drums were already characterized by USEPA sampling, they were not resampled as part of the removal action. The solvent-like organic compounds that were found in these two drums typically require pre-treatment prior to land disposal. Based on the results of previous USEPA characterization of these drums, it was determined that thermal treatment through incineration would be appropriate for these materials. Further characterization of these drums for disposal purposes confirmed that incineration was appropriate for the wastes, and that one of the drums (TL-1) contained approximately 365 ppm of Arochlor 1248. These two drums are being held for thermal destruction at the Rollins incineration facility in Deer Park, Texas. Rollins is RCRA and TSCA-approved, and can accept CERCLA wastes.

Also removed from the site on January 31, 1992, were the six non-hazardous containers (approximately 650 gallons) of water that was decanted from the underwater drums. The drummed water was found to be non-hazardous, and the water was sent to

CWM's Control Waste, Inc. in Menomonee, Wisconsin, for treatment and disposal. Control Waste is a licensed hazardous waste TSD facility.

The other 97 drums removed from the on-land and off-shore areas during this removal activity were found to contain non-hazardous wastes. Recent additional characterization of this waste stream by CWM also confirmed that these drums are non-hazardous (Appendix E). These drums were emptied into one of two 25-cubic yard roll-off boxes equipped with a double liner. After each drum was emptied into the roll-off, the empty drum was crushed and placed in the roll-off box with the waste. Consolidation of the drums into the boxes was completed on January 31, 1991, and the boxes were covered with a heavy-duty nylon tarp equipped with interior umbrellas to prevent the collection of precipitation on the cover. The roll-off boxes were transported off the site on February 11, 1992. Due to the nature of the contract for disposal with Chemical Waste Management and the Respondents desire to provide a high level of long-term protectiveness, all non-hazardous waste material from the Torch Lake drums removed was disposed of at CWM's Adams Center Landfill (Fort Wayne, Indiana), a secure hazardous waste disposal facility.

4.0 RESOURCES COMMITTED

The Respondents designated Geraghty & Miller, Inc. as their contractor to assist in fulfilling the requirements of the Order. Geraghty & Miller used their staff, along with the services of specialty subcontractors, to accomplish the removal effort. This section of the report details the resources used to fulfill the requirements of the Order. The manpower and equipment necessary to fulfill each task presented below, and a cost estimate for the removal effort is provided at the end of this section.

4.1 MANPOWER AND EQUIPMENT

4.1.1 Work Plan Development

Geraghty & Miller prepared the Draft and Final Work Plan for the drum removal effort using the professional services of several Geraghty & Miller engineers and scientists. Gary Kruger (Project Engineer/Chemical) was the Geraghty & Miller project manager responsible for the development of the Work Plan for the drum removal at Torch Lake. Richard Bartelt, Vice President and CERCLA Services Manager for the Midwest Region of Geraghty & Miller, was the Principal Engineer responsible for Work Plan development and implementation. Geraghty & Miller drew upon the resources of other professionals within the company as necessary to produce an effective document to satisfy the requirements of the Order.

4.1.2 Underwater Drum Investigation

Geraghty & Miller contracted with Environmental & Marine Services, Inc. (EMS) to perform the underwater activities necessary to fulfill the Order. A copy of this contract is included as Appendix G of this report. The personnel on-site during the underwater drum investigation included:

<u>Personnel</u>	<u>Affiliation</u>
W. Nied	USEPA OSC
G. Kruger	Geraghty & Miller
D. Gillson	EMS - Project Officer
D. Windingstab	EMS - Field Manager
K. Brekke	EMS - ROV Operator
T. Julio	Julio Contracting

The specialty equipment used during the underwater survey included:

<u>Equipment</u>	<u>Type</u>
Side Scan Sonar (SSS)	Hydroscan Klein Side Scan Sonar
SSS Recorder	Klein 3-Channel Recorder Model No. 531
Remote Operated Vehicle (ROV)	Deep Ocean Engineering Phantom 300
ROV Monitor	Sony Trinitron 13" Color
Long Range Navigation (Loran) System	Si-Tex XJ-2 Loran C

Also used to accomplish the underwater investigation task was a variety of common marine equipment along with a tug boat operated by Julio Contracting.

4.1.3 Underwater Drum Removal

Geraghty & Miller also contracted with EMS to perform the underwater drum removal activities necessary to fulfill the Order. Personnel present on-site during the course of the underwater drum removal effort were:

<u>Personnel</u>	<u>Affiliation</u>	<u>Personnel</u>	<u>Affiliation</u>
W. Nied	USEPA OSC	S. Kleasby	EMS - Diver/Tender
A. Busher	Ecology & Environment (USEPA Contractor)	J. Mackie	EMS - Diver/Tender
R. Irvin	MDNR	D. Cook	EMS - Diver/Tender
D. Gruben	MDNR	P. Rude	EMS - Diver/Tender
L. Smith	MDNR	K. Brekke	EMS - Diver/Tender
G. Kruger	Geraghty & Miller	D. Windingstab	EMS - Field Manger

Specialty equipment utilized for the drum removal effort included:

- 1 16-foot aluminum boat with outboard motor
- 2 steel barges used as a floating work station
- 1 hydraulically controlled diving platform
- 1 underwater overpack drum clamp
- 1 underwater video camera
- 1 crane

Other ancillary equipment necessary for the work included a pick-up truck/utility vehicle, steel overpacks, and miscellaneous dive and marine equipment related to on and underwater operations.

4.1.4 Terrestrial Drum Removal

Geraghty & Miller contracted with the ENRAC division of Chemical Waste Management (CWM) to perform the on-land removal work necessary to fulfill the Order. A copy of the CWM contract is included as Appendix H of this report. Personnel present on-site during the course of the on-land drum removal effort included:

<u>Personnel</u>	<u>Affiliation</u>	<u>Personnel</u>	<u>Affiliation</u>
W. Nied	USEPA OSC	P. Bolger	CWM
R. Irvin	MDNR	D. Zurek	CWM
S. Krajcovic	MDNR	C. White	CWM
G. Kruger	Geraghty & Miller	J. York	CWM

Equipment utilized for the on-land removal and staging work included a backhoe, two 40-foot semi-trailers used for drum storage, steel overpacks, and miscellaneous other field equipment necessary to perform the removal effort.

4.1.5 Drum Sampling and Analysis

The same personnel were utilized for the drum sampling as for the drum removal activity. CWM sampled the drums under the direction of Geraghty & Miller using stainless steel spoons for drummed solid samples and a disposable coliwasa for drummed liquid samples. All samples were sent to Analytica, Inc. via UPS Overnight for analysis.

4.1.6 Drum Disposal

Geraghty & Miller contracted CWM for disposal of the drums. CWM utilized the same number and type of individuals for the drum removal and consolidation as were used during the on-site drum removal effort.

Equipment used during the drum consolidation and disposal phase of the project included the use of a snow plow to access the stored drums, the use of a backhoe/front end loader with a drum handler attachment, two 25-cubic yard roll-off boxes, and miscellaneous other equipment for the handling of drums.

Actual disposal or treatment of the drummed waste was carried out at one of three licensed TSD facilities as described in Section 3.7 of this report.

4.2 REMOVAL COSTS

Compilation of final costs for the removal effort cannot be reported at this time since all charges related to the removal effort have not yet been invoiced (see Appendices J and K for invoices sent to date). However, an estimate of the removal costs can be made based on expenditures to date and outstanding billings. The cost estimates presented below represent only the technical removal costs from Geraghty & Miller and their subcontractors, and do not include other ancillary costs to the Respondent in fulfilling the Order (e.g., legal support, internal costs, regulatory agency oversight, etc.) The costs presented in this section are rounded to the nearest \$1,000, and expected to be accurate to within 5% of the final technical costs for the removal.

Geraghty & Miller, Inc., was tasked to develop the Scope of Work, prepare the draft and final Work Plan, perform as general contractor for the site, manage field work, provide technical support, and fulfill the reporting requirements for the Order. Costs associated with these functions will total approximately \$175,000 for this removal action.

Analytica, Inc., was tasked to perform the chemical analysis for the characterization of drums for this removal action. Analytica's costs for these analyses total approximately \$21,000.

Environmental & Marine Services, Inc. (EMS) performed the underwater drum investigation and removal activities. EMS costs for these activities are approximately \$145,000.

The ENRAC Division of Chemical Waste Management, Inc. (CWM) performed the terrestrial (on-land) drum removal as well as the sampling, staging, and disposal of all drums removed under the Order. CWM costs for this effort total approximately \$97,000.

The technical cost of the drum removal effort will therefore total approximately \$438,000, and this includes all efforts made by Geraghty & Miller and their subcontractors to fulfill the requirements of the Order.

5.0 SUMMARY

Universal Oil Products Co., Inc., Quincy Mining Company, Quincy Development Corp., Houghton County Department of Public Works, Superior Crafts, Inc., and Rudolf Kump ("Respondents"), were issued an administrative order by consent (the Order) by the USEPA dated July 30, 1991. The Order required the Respondents to perform specific drum search, removal, and disposal activities for drums located along the western shoreline of Torch Lake in Houghton County, Michigan. Consistent with the Order, Geraghty & Miller, Inc. developed this Final Drum Removal Report to summarize the drum removal, characterization, and disposal effort that was initiated in the Summer of 1991 at the Torch Lake Superfund Site.

The Order included requirements that the Respondents conduct on-land and underwater search activities for drums known to exist at specific areas along the western shoreline of Torch Lake, to sample the drums encountered, and to appropriately dispose of all drums found to contain hazardous materials. The Respondents have successfully completed these activities using USEPA-approved contractors and subcontractors, and have performed the work under the guidance and approval of the USEPA OSC. All work performed was protective of human health and the environment during all phases of the removal action, and were conducted to minimize costs as consistent with the NCP, the goals of the Order, and appropriate EPA guidance.

The Respondents designated Geraghty & Miller, Inc., as their contractor to fulfill the technical requirements of the Order. Geraghty & Miller developed and implemented a USEPA-approved Work Plan for the site (G&M 1991) and directed several specialty subcontractors to successfully complete the work.

During the course of the investigation, 103 drums were overpacked and removed pursuant to the order. Of the drums removed, 83 drums were removed from four on-land locations and 20 drums were removed from two shallow underwater locations along western shoreline of Torch Lake. All of the drums were disposed of in an appropriate manner by the Respondents.

The vast majority of the drums removed (97 of the 103 drums removed) contained non-hazardous wastes. The level of inorganics, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) found within these non-hazardous drums were not leachable using the Toxicity Characteristic Leaching Procedure (TCLP), and thus they are not considered RCRA-hazardous wastes by the characteristic of toxicity. In an effort to obtain the most secure and environmentally sound disposal practical for these non-hazardous wastes, these drums were removed by the Respondents and disposed of in a licensed hazardous waste storage facility.

Of the 103 total drums removed, only four (4) drums were found to contain RCRA-hazardous wastes by the characteristic of toxicity using the TCLP for metals. These drums were removed, treated to render them non-leachable, and disposed of in a secure, licensed hazardous waste landfill.

Two of the drums removed were tested previously by the USEPA and were found to contain organic substances that require treatment prior to disposal; one of these drums may contain substances that the USEPA consider hazardous wastes (F-listed solvents). The presence of both of these drums appeared to be the result of a recent unauthorized random disposal. The contents of these drums are being held for thermal destruction at a licensed hazardous waste treatment facility.

6.0 REFERENCES

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- USEPA 1990. Environmental Protection Agency National Oil and Hazardous Substances Pollution Contingency Plan under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 40 CFR 300, ammended by 55 FR 9692, March 14, 1990.
- USEPA 1989. Ground Penetrating Radar Survey, Torch Lake, Houghton County, Michigan, May 9-11, 1989.

5.0 REFERENCES (Cont'd)¹

USEPA 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, Interim Final, EPA/540/G-89/004, October, 1988.

Wagner, K., R. Wetzel, H. Bryson, C. Furman, A. Wickline, V. Hodge 1987. Drum Handling Manual for Hazardous Waste Sites.

Weston 1990a. Site Assessment for Torch Lake, Houghton County, Michigan, February, 1990.

Weston 1990b. Torch Lake Drum Sampling Results Letter to Mr. Duane Heaton, USEPA, September 25, 1990.

¹ Copies of relevant portions of these references will be supplied to the USEPA on request.

TABLE 1: DRUM SUMMARY
 TORCH LAKE DRUM REMOVAL
 HOUGHTON COUNTY, MICHIGAN

Overpack Drum Number	Sample Number	Area Found	Description	Previous (Weston) Sample & Date
TL-001	DS-01	Lake/PCI	Dark granular material w/red flecks	-None-
TL-002	DS-08	Lake/PCI	Dark granular material w/metal shavings	-None-
TL-003	DS-03	Lake/PCI	110 gallon overpack w/whitish solids (NOTE - The contents of this drum were removed and placed into overpack drum number TL-015)	-None-
TL-004	DS-02	Lake/PCI	Dark granular material w/some petrol odor	-None-
TL-005	DS-04	Lake/PCI	Dark solid	-None-
TL-006	-None-	Lake/PCI	Dark solid	-None-
TL-007	DS-05	Lake/PCI	Dark solid	-None-
TL-008	-None-	Lake/PCI	Dark solid	-None-
TL-009	-None-	Lake/Area 1	Dark, low-density solid	-None-
TL-010	DS-06	Lake/Area 1	Thick black semi-solid	-None-
TL-011	DS-07	Lake/Area 1	Thick black semi-solid	-None-
TL-012	-None-	Lake/Area 1	Black grease-like substance	-None-
TL-013	-None-	Lake/Area 1	Dark, low-density solid	-None-
TL-014	-None-	Lake/Area 1	Dark, low-density solid	-None-
TL-015	-None-	Lake/Area 1	RCRA empty; Now contains TL-003 contents	-None-
TL-016	-None-	Lake/Area 1	Thick black semi-solid	-None-
TL-016B	-None-	Lake/Area 1	Thick black semi-solid (Overflow from TL-016)	-None-
TL-017	-None-	Lake/Area 1	Thick black semi-solid	-None-
TL-018	-None-	Lake/Area 1	Thick black semi-solid	-None-
TL-019	-None-	Lake/Area 1	Dark, low-density solid	-None-
TL-020	-None-	Lake/Area 1	Dark, low-density solid	-None-

TABLE 1: DRUM SUMMARY
 TORCH LAKE DRUM REMOVAL
 HOUGHTON COUNTY, MICHIGAN

Overpack Drum Number	Sample Number	Area Found	Description	Previous (Weston) Sample & Date
TL-1	-None-	Land/Area 4	Black liquid	S-68, 8/1/90
TL-2	DS-09	Land/Area 4	Black grease-like substance w/some rainwater	-None-
TL-3	-None-	Land/Area 4	Hardened black grease	S-69, 8/1/90
TL-4	-None-	Land/Area 4	Hardened black grease	-None-
TL-5	DS-10	Land/Area 4	Hard, brittle black tar	-None-
TL-6	-None-	Land/Area 3	Black grease-like substance	-None-
TL-7	DS-11	Land/Area 2	Light colored ash-like solid	-None-
TL-8	-None-	Land/Area 2	Black grease-like substance	-None-
TL-9	-None-	Land/Area 2	Black grease-like substance	-None-
TL-10	-None-	Land/Area 1	Thick black semi-solid + some bricks & debris	-None-
TL-11	DS-12	Land/Area 1	Dark, low-density solid	-None-
TL-12	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-13	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-14	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-15	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-16	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-17	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-18	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-19	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-20	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-21	-None-	Land/Area 1	Dark, low-density solid	
TL-22	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-23	-None-	Land/Area 1	Thick black semi-solid + some bricks & debris	-None-

TABLE 1: DRUM SUMMARY
 TORCH LAKE DRUM REMOVAL
 HOUGHTON COUNTY, MICHIGAN

Overpack Drum Number	Sample Number	Area Found	Description	Previous (Weston) Sample & Date
TL-24	-None-	Land/Area 1	Thick black semi-solid + some bricks & debris	-None-
TL-25	DS-13	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-26	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-27	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-28	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-29	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-30	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-31	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-32	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-33	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-34	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-35	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-36	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-37	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-

TABLE 1: DRUM SUMMARY
 TORCH LAKE DRUM REMOVAL
 HOUGHTON COUNTY, MICHIGAN

Overpack Drum Number	Sample Number	Area Found	Description	Previous (Weston) Sample & Date
TL-38	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-39	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-40	DS-14	Land/Area 1	Black grease-like substance	-None-
TL-41	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-42	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-43	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-44	-None-	Land/Area 1	Light-Colored solid tested non-haz by USEPA.	S-65, 8/1/90
TL-45	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-46	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-47	-None-	Land/Area 1	Black grease-like substance + Dark, low-density solids	-None-
TL-48	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-49	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-50	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-51	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-52	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-53	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-54	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-55	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-56	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-57	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-

TABLE 1: DRUM SUMMARY
 TORCH LAKE DRUM REMOVAL
 HOUGHTON COUNTY, MICHIGAN

Overpack Drum Number	Sample Number	Area Found	Description	Previous (Weston) Sample & Date
TL-58	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-59	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-60	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	S-64, 8/1/90
TL-61	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-62	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-63	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-64	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-65	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-66	-None-	Land/Area 1	Dark, low-density solid	
TL-67	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-68	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-69	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-70	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-71	-None-	Land/Area 1	Dark, low-density solid + some bricks & debris	-None-
TL-72	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-73	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-74	-None-	Land/Area 1	Dark, low-density solid	-None-
TL-75	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid	-None-
TL-76	DS-16	Land/Area 1	White solid	-None-

TABLE 1: DRUM SUMMARY
 TORCH LAKE DRUM REMOVAL
 HOUGHTON COUNTY, MICHIGAN

Overpack Drum Number	Sample Number	Area Found	Description	Previous (Weston) Sample & Date
TL-77	-None-	Land/Area 1	Thick black semi-solid	-None-
TL-78	-None-	Land/Area 1	Thick black semi-solid	-None-
TL-79	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-80	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-81	-None-	Land/Area 1	Dark, low density solid + thick black semi-solid + some bricks & debris	-None-
TL-82	DS-15	Land/Area 1	White gravel-like material	-None-
TL-83	-None-	Land/Area 2	Greasy rags	S-67, 8/1/90 S-62, 6/21/89

**TABLE 2: TCLP/METALS ANALYTICAL RESULTS
TORCH LAKE DRUM REMOVAL
HOUGHTON COUNTY, MICHIGAN**

ANALYTE	TCLP LIMIT (mg/l)	SAMPLE NUMBER															
		DS-01 (mg/l)	DS-02 (mg/l)	DS-03 (mg/l)	DS-04 (mg/l)	DS-05 (mg/l)	DS-06 (mg/l)	DS-07 (mg/l)	DS-08 (mg/l)	DS-09 (mg/l)	DS-10 (mg/l)	DS-11 (mg/l)	DS-12 (mg/l)	DS-13 (mg/l)	DS-14 (mg/l)	DS-15 (mg/l)	DS-16 (mg/l)
Arsenic	5.0	0.106	0.038	<.001	<.001	0.0105	<.001	<.001	0.121	0.0017	<.001	0.0033	<.001	<.001	<.001	<.001	<.001
Barium	100	1.26	16.8	4770	1.34	1.92	0.692	0.35	5.83	1.11	0.483	0.717	0.929	0.591	0.33	0.246	0.428
Cadmium	1.0	0.0399	1.99	<.200	<.008	<.008	<.004	<.004	1.23	<.008	<.004	<.004	<.008	<.008	<.004	<.008	<.004
Chromium	5.0	0.0825	<.010	<.250	0.0147	0.0223	<.005	<.005	<.010	0.0127	<.005	<.005	0.0265	0.0085	<.005	<.010	<.005
Lead	5.0	7.49	6.68	1.93	0.594	0.412	0.0381	0.0051	37.7	0.052	0.0702	0.123	1.32	4.05	0.0341	0.0161	0.0684
Mercury	0.2	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002	<.0002
Selenium	1.0	<.002	<.010	<.020	<.002	<.004	<.002	<.002	<.004	<.002	<.002	<.010	<.004	<.002	<.002	<.010	<.002
Silver	5.0	<.010	<.010	<.250	<.010	<.010	<.005	<.005	<.010	<.010	<.005	<.005	<.010	<.005	<.005	<.010	<.005

Key: XX - Dark shading indicates value exceeds TCLP Limit.

<XX - Analyte not detected above this detection limit.

**TABLE 3: VOLATILE ORGANIC ANALYTICAL RESULTS
TORCH LAKE DRUM REMOVAL
HOUGHTON COUNTY, MICHIGAN**

ANALYTE	SAMPLE NUMBER															
	DS-01 (ug/kg)	DS-02 (ug/kg)	DS-03 (ug/kg)	DS-04 (ug/kg)	DS-05 (ug/kg)	DS-06 (ug/kg)	DS-07 (ug/kg)	DS-08 (ug/kg)	DS-09 (ug/kg)	DS-10 (ug/kg)	DS-11 (ug/kg)	DS-12 (ug/kg)	DS-13 (ug/kg)	DS-14 (ug/kg)	DS-15 (ug/kg)	DS-16 (ug/kg)
Methylene Chloride																22 J
Acetone	21	85	36		18											
Carbon Disulfide			1 J			250 J										
2-Butanone		23			4 J		110 J									
2-Hexanone														360 J		1800
Tetrachloroethene						110 J		300 J								
Toluene						99 J	110 J	86 J		19 J		100	13			
Ethylbenzene		3 J											25			
Styrene													3J			
M+P-Xylenes													110			
o-Xylenes													16			

- A blank box indicates that the analyte was analyzed for and not detected.

<XX - The numerical value is an estimated quantity because the amount detected is below the required limits or quality control criteria were outside of control limits.

**TABLE 4: SEMIVOLATILE ORGANIC ANALYTICAL RESULTS
TORCH LAKE DRUM REMOVAL
HOUGHTON COUNTY, MICHIGAN**

ANALYTE	SAMPLE NUMBER															
	DS-01 (ug/kg)	DS-02 (ug/kg)	DS-03 (ug/kg)	DS-04 (ug/kg)	DS-05 (ug/kg)	DS-06 (ug/kg)	DS-07 (ug/kg)	DS-08 (ug/kg)	DS-09 (ug/kg)	DS-10 (ug/kg)	DS-11 (ug/kg)	DS-12 (ug/kg)	DS-13 (ug/kg)	DS-14 (ug/kg)	DS-15 (ug/kg)	DS-16 (ug/kg)
4-Methylphenol		3600 J														
Naphthalene								2900	1200 J				8500 J			
2-Methylnaphthalene								19000 E	2000 J				12000			
Acenaphthylene									7500 J							
Acenaphthene									14000							
Dibenzofuran									6400 J				2200 J			
Fluorene									16000							
Phenanthrene		4100 J							26000				920 J			
Fluoranthene			44 J						35000		84 J					
Pyrene		3500 J						5300	25000	23000 J						
Butylbenzylphthalate			67 J		45 J											
Chrysene								1400	11000 J	25000 J						
bis(2-Ethylhexyl)phthalate														110000 J		
Benzo(k)fluoranthene								1100	12000 J							47 J
Benzo(a)pyrene								470	4900 J	34000 J						
Indeno(1,2,3-cd)pyrene								150 J								
Benzo(g,h,i)pyrene								170 J		14000 J						

Key: - A blank box indicates that the analyte was analyzed for and not detected.

J - The numerical value is an estimated quantity because the amount detected is below the required limits or quality control criteria were outside of control limits.

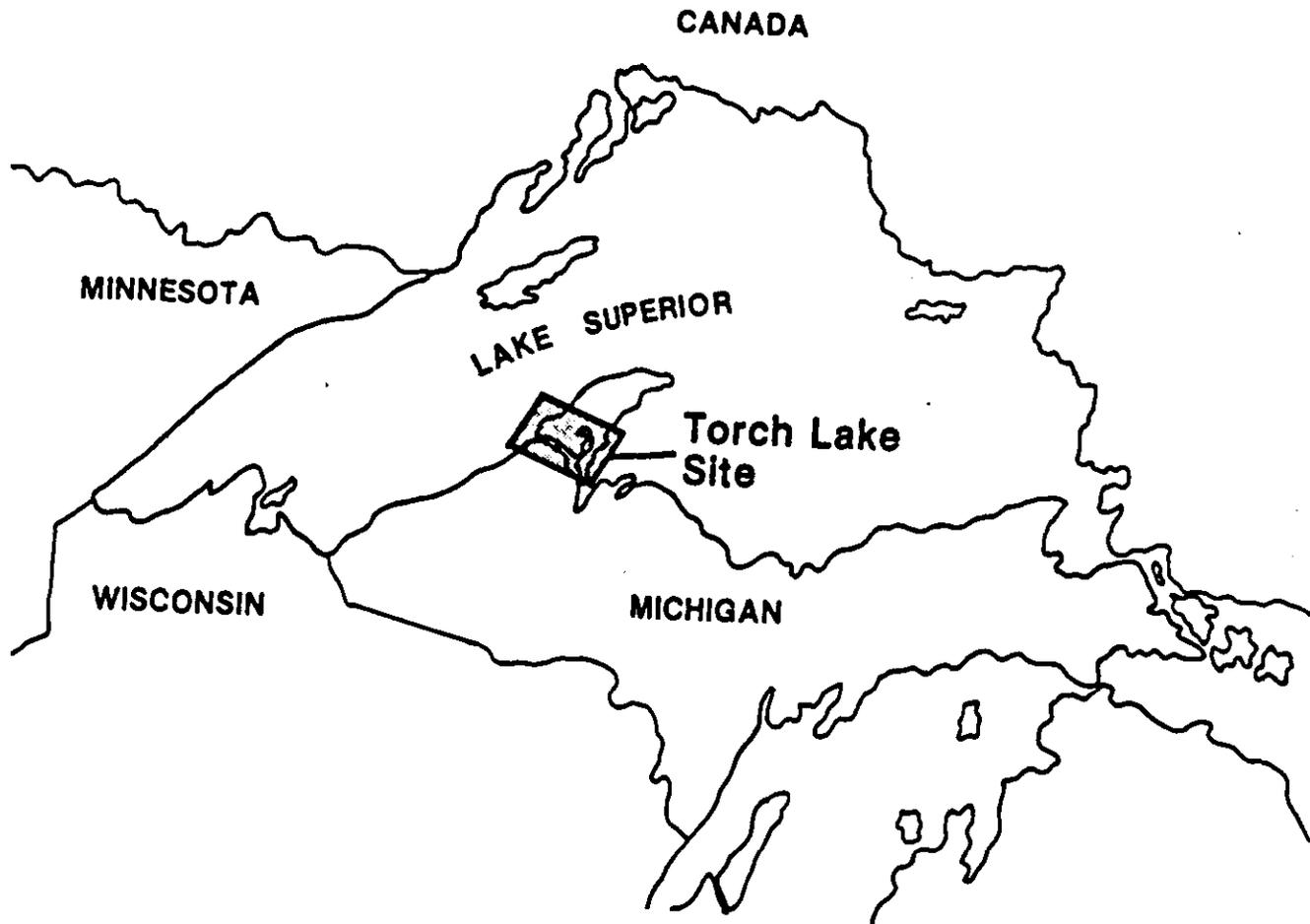
E - The numerical value is an estimated quantity due to the presence of target analytes at levels exceeding the documented linear calibration range.

**TABLE 5: TCLP/METALS ANALYTICAL RESULTS
TORCH LAKE SLAG DRUMS
HOUGHTON COUNTY, MICHIGAN**

ANALYTE	TCLP LIMIT (mg/l)	Sample Number			
		SL-01 (mg/l)	SL-02 (mg/l)	SL-03 (mg/l)	SL-04 (mg/l)
Arsenic	5.0	<.001	<.001	<.001	<.001
Barium	100	0.716	0.509	0.67	0.515
Cadmium	1.0	<.008	<.008	<.008	<.008
Chromium	5.0	0.0662	0.115	0.0482	0.316
Lead	5.0	0.0176	0.0091	0.0146	0.0161
Mercury	0.2	<.0002	<.0002	<.0002	<.0002
Selenium	1.0	<.002	<.002	<.002	<.004
Silver	5.0	<.010	<.010	<.010	<.010

Note: None of the results exceed the TCLP Toxic Limit.

<XX - Analyte not detected above this detection limit.



Source: Donohue, March 1989



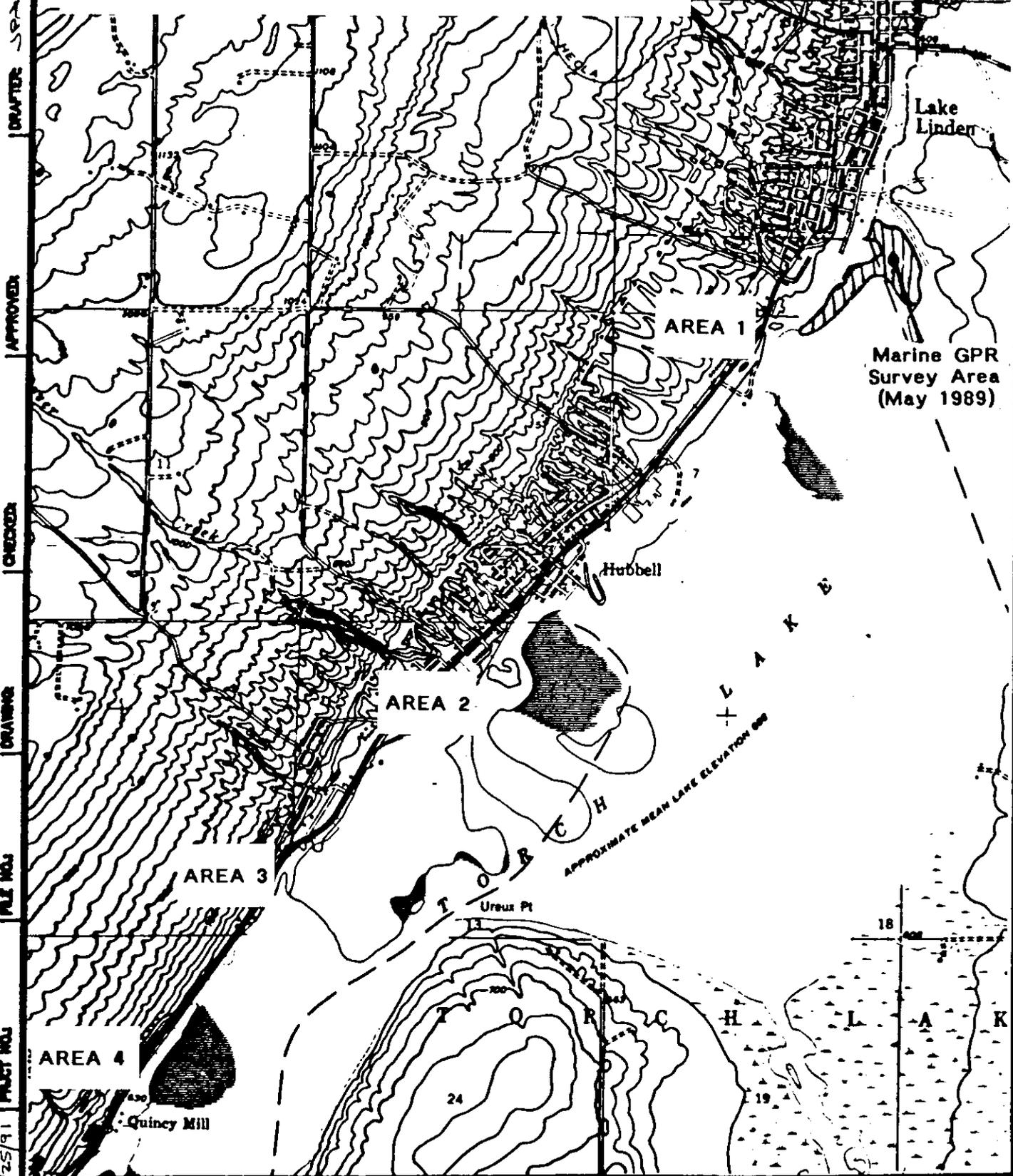
SITE LOCATION MAP

**TORCH LAKE SUPERFUND SITE
HOUGHTON COUNTY, MICHIGAN**

FIGURE

1

Source: USGS 7.5 Series Topographic Map, Laurium, MI



DRAFTER
 APPROVER
 CHECKER
 DRAWING
 FILE NO.
 PROJECT NO.
 DWG DATE 06/25/91



DRUM LOCATION AREAS
 TORCH LAKE SUPERFUND SITE
 HOUGHTON COUNTY, MICHIGAN

FIGURE
2

APPENDIX A

6/21/89 DRUM SAMPLING RESULTS

Samples were collected from the spigot located closest to the well and prior to any water treatment system or holding tank. All samples were analyzed for volatile organic compounds (VOCs) and hazardous substance list (HSL) metals, and two samples were additionally analyzed for acid and base/neutrals (ABN) and cyanide, under TAT Analytical Services TDD#5-8907-L4, by Weston-Gulf Coast Labs.

4.0 ANALYTICAL RESULTS

The analytical results from the TAT sampling are summarized in Tables 3-7.

4.1 Drum and Soil Sampling

The EP toxicity metals data, summarized in Table 3, indicates that none of the material sampled is considered hazardous based on the RCRA characteristics of EP toxicity (all levels were below the maximum concentrations established in 49 CFR Part 261).

Analytical results of the RCRA/asbestos analysis are summarized in Table 4. The material sampled for RCRA parameter analysis was not considered to be hazardous based on RCRA characteristics. Asbestos analysis indicates that the roofing tile material contains 30-40 percent chrysotile asbestos.

Organic analysis of the samples is summarized in Table 5. None of the samples contained pesticides or PCBs above method detection limits. The sample from Hubbell-Drum #2 (S62) contained 4000 ppm trichloroethene (TCE) and 34 ppm bis(2-ethylhexyl)phthalate. Samples S-58 and S-66 contained methylene chloride at 5 ppm and 3 ppm respectively, but methylene chloride was also detected in the background sample. Contaminants detected at estimated levels include: acetone, benzene, 2-hexanone, xylene, tetrachlorethene, benzoic acid, phenanthrene, fluoranthene, pyrene, chrysene, di-n-octylphthalate, naphthalene and 2-methylnaphthalene. Additional tentatively identified organic compounds for the samples are summarized in Attachment A. The analytical results of the total HSL metals and cyanide analysis for the background soil sample are summarized in Table 6. All of the levels detected were within the typical concentration ranges of metals in soil. Total metals and cyanide analytical results for the remaining samples were not available at the time of writing.

4.2 Ground Water Sampling

Analytical results of the TAT well water sampling are summarized in Table 7. The sample collected from the Village of Lake Linden Municipal Well (S-77) contained iron levels (0.33 ppm) greater than the secondary maximum contaminant level (SMCL) of 0.3 ppm. None of the organics detected in the samples were at levels above the MCL or removal action level (RAL).

TABLE 3
ANALYTICAL RESULTS OF TAT SAMPLING - EP TOXIC METALS¹
TORCH LAKE
JUNE 21, 1989
(All results in mg/l)

PARAMETER	E-27	E-28	E-29	E-61	E-62	E-63	E-64	E-67	E-68	E-69	RCRA Maximum Concentration
Arsenic	ND	.0094B	.0034B	ND	ND	ND	ND	ND	ND	ND	5.0
Barium	ND	.0159B	.0045B	.0362B	.0043B	ND	.0237B	.0034B	.0280B	.1328B	100.0
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0
Chromium	ND	.0114	.0086B	.0114	.0086B	ND	.0114	.0057B	.0114	.0071B	5.0
Lead	ND	ND	.0620	ND	.0913	ND	ND	ND	ND	ND	5.0
Mercury	ND	ND	.0002	ND	ND	ND	ND	ND	.0002	ND	0.2
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.0

¹ Samples analyzed by Atos Associates under Analytical Services TDDF 9-8904-L8

ND = Not detected at method detection limits

B = Detected in blank

TABLE 4
ANALYTICAL RESULTS OF TAT SAMPLING - RCRA/ASBESTOS¹
TORCH LAKE
JUNE 21, 1989

<u>PARAMETER</u>	<u>SAMPLE NUMBER</u>		
	<u>S-57</u>	<u>S-65</u>	<u>S-60</u>
Cyanide (mg/kg)			
Total	ND	ND	NA
Reactive	ND	ND	NA
Sulfide (mg/kg)			
Total	ND	ND	NA
Reactive	ND	ND	NA
pH	5.1	8.8	NA
Flashpoint °F	>140	>140	NA
Asbestos			
& Chrysotile	NA	NA	30-40

¹Samples analyzed by ATEC Associates under Analytical Services
TDD#5-8906-L8
ND = Not detected at method detection limits
NA = Not Analyzed

TABLE 5
ANALYTICAL RESULTS OF TAT SAMPLING - ORGANICS¹
TORCH LAKE
JUNE 21, 1989
(All results in mg/kg)

<u>Parameter</u>	<u>2-28</u>	<u>2-29</u>	<u>2-61</u>	<u>2-62</u>	<u>2-66</u>	<u>2-67</u>	<u>2-68</u>	<u>2-69</u>	<u>2-70</u>
Methylene Chloride	5.0	ND	1.0J	86.0J	3.0	79.0J	2.0J	2.0J	.013
Acetone	ND	ND	ND	ND	ND	ND	ND	4.0J	.016
Benzene	ND	ND	ND	ND	ND	ND	ND	1.0J	ND
2-Nonanone	ND	ND	ND	ND	ND	ND	ND	3.0J	ND
Xylene	ND	ND	ND	ND	ND	240J	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	4908	ND	ND	ND	ND	.004J
2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	32J	ND	12J	34	3J	21J	ND	ND	.006
Benzoic Acid	ND	ND	ND	ND	ND	ND	ND	100J	.
Phenanthrene	ND	ND	ND	ND	ND	ND	1J	ND	.
Fluoranthene	ND	ND	ND	ND	ND	ND	3J	ND	.
Pyrene	ND	ND	ND	ND	ND	ND	2J	ND	.
Chrysene	ND	ND	ND	ND	ND	ND	2J	ND	.
Di-n-octylphthalate	ND	ND	ND	7J	ND	ND	3J	ND	.
Naphthalene	ND	ND	ND	ND	ND	47J	ND	ND	.
2-methylnaphthalene	ND	ND	ND	3J	ND	19J	ND	ND	.

¹Samples analyzed by Western Research Institute (CLP)
 Intech (CLP)

ND = Not detected at method detection limits

NA = Not analyzed

*Data unusable due to exceeded holding times

J = Estimated value

VOLATILES

SAMPLE #	TENTATIVELY IDENTIFIED COMPOUNDS (RESULTS IN MG/KG-ALL VALUES ESTIMATED)	
S-59	UNKNOWN COMPOUND	7
	ACETIC ACID, METHYL ESTER OR ISOMER	29
	PROPANOIC ACID, METHYL ESTER OR ISOMER	9
	POSSIBLE CARBOXYLIC ACID ESTER	12
	POSSIBLE CARBOXYLIC ACID ESTER	25
	UNKNOWN COMPOUND	13
	POSSIBLE CARBOXYLIC ACID ESTER	60
	POSSIBLE C8H16O ISOMER	8
S-67	UNDECANE OR ISOMER	3950
	≥ C10 ALKANE	2300
	≥ C10 ALKANE	1400
	NONANE, 4-METHYL OR ISOMER	2500
	≥ ALKANE	800
	CYCLOPENTANE 1-METHYL-3-(2-METHYLPROPYL) OR ISOMER	2300
	DECANE OR ISOMER	6500
	BENZENE 1,2,4-TRIMETHYL OR ISOMER	1950
	NONANE-2,6-DIMETHYL OR ISOMER	1100
	NAPHTHALENE, DECAHYDRO- OR ISOMER	1150
S-68	UNKNOWN COMPOUND	8
	NONANE OR ISOMER	3
	≥ C10 ALKANE	4
	BENZENE 1,2,4-TRIMETHYL- OR ISOMER + UNKNOWN	5
	DECANE OR ISOMER	10
	≥ C10 ALKANE	5
	BENZENE 1,2,3-TRIMETHYL- OR ISOMER	4
	≥ C10 ALKANE	6
	UNKNOWN COMPOUND	3
S-69	C6H14 ALKANE	11
	HEPTANE OR ISOMER	29
	UNKNOWN ALKANE	8
	OCTANE OR ISOMER	36
	HEXANOL OR ISOMER	29
	2-HEPTANONE OR ISOMER	11
	UNKNOWN COMPOUND	15
	POSSIBLE C12H24 ISOMER	6
	CYCLOHEXENE 3(2-METHYLPROPYL) OR ISOMER	14
	UNKNOWN ALKANE	27
S-70	UNKNOWN HYDROCARBON	.004

SEMIVOLATILES

SAMPLE #

**TENTATIVELY IDENTIFIED COMPOUNDS
(RESULTS IN MG/KG-ALL VALUES ESTIMATED)**

S-58	≥ C15H32 ALKANE	200
	HEXADECANOIC ACID OR ISOMER	10000
	HEXADECANOIC ACID, BUTYL ESTER	1000
	≥ C15H32 ALKANE	400
	≥ C19H40	500
	OCTADECANOIC ACID, BUTYL ESTER OR ISOMER	1000
	≥ C20H42 ALKANE	600
	UNKNOWN	200
	≥ C20H42 ALKANE	500
	≥ C20H42 ALKANE	700
	≥ C20H42 ALKANE	700
	≥ C20H42 ALKANE	600
	≥ C21H44 ALKANE	600
	≥ C20H42 ALKANE	500
	≥ C15H32 ALKANE	400
	≥ C20H42 ALKANE	200
	POSSIBLE ACID ESTER	600
	POSSIBLE ACID ESTER	1000
	POSSIBLE ACID ESTER	1000
	S-59	HEXADECANOIC ACID, BUTYL ESTER	1000
≥ C15H32 ALKANE		200
≥ C15H32 ALKANE		300
OCTADECANOIC ACID, BUTYL ESTER		1000
≥ C15H32 ALKANE		400
≥ C20H42 ALKANE		500
≥ C20H42 ALKANE		500
≥ C17H36 ALKANE		600
≥ C20H42 ALKANE		500
≥ C19H40 ALKANE		600
≥ C18H38 ALKANE		400
≥ C18H38 ALKANE		400
POSSIBLE ACID ESTER		800
S-61	HEXADECANOIC ACID, BUTYL ESTER	4
	OCTADECANOIC ACID, BUTYL ESTER	5
S-62	TETRADECANE OR ISOMER	10
	HEXADECANE OR ISOMER	20
	POSSIBLE ALKANE	7
	POSSIBLE C17H36 ALKANE	10
	≥ C15H32 ALKANE	30
	UNKNOWN, POSSIBLE ALKANE	10
	≥ C15H30 ALKANE	20
TRIDECANE, 7-HEXYL- OR ISOMER	20	

S-62 (CONT'D)

EICOSANE OR ISOMER	20
POSSIBLE BRANCHED ALKANE	30
≥ C16H34 ALKANE	20
POSSIBLE BRANCHED ALKANE	20
UNKNOWN	70
DOCOSANE OR ISOMER	50
≥ C16H34 ALKANE	50
POSSIBLE ALKANE	30
POSSIBLE ≥ C17H36 ALKANE	100
≥ C18H38 ALKANE	50
≥ C19H40 ALKANE	100
UNKNOWN	40

S-66

≥ C18H38 ALKANE	4
-----------------	---

S-67

NONANE, 3-METHYL OR ISOMER	600
≥ C10H22 ALKANE	700
1,1,2,3-TETRAMETHYLCYCLOHEXANE A	600
NONANE, 4-METHYL- OR ISOMER	700
≥ C10H22 ALKANE	400
NONANE, 3-METHYL- OR ISOMER	500
C3 BENZENE + UNKNOWN	400
BENZENE, 1,2,4-TRIMETHYL- OR ISOMER	600
DECANE OR ISOMER	2000
DECANE, 4-METHYL- OR ISOMER	800
BENZENE, 1-ETHYL-3-METHYL	500
CYCLOHEXANE, (1-METHYLPROPYL)-	500
≥ C11H24 ALKANE	600
POSSIBLE C10H18 ISOMER	600
≥ C11H24 ALKANE	400
≥ C11H24 ALKANE	400
≥ C11H24 ALKANE	1000
DODECANE OR ISOMER	600
OCTADECANOIC ACID, BUTYL ESTER	300
OCTADECANOIC ACID, BUTYL ESTER	200

S-68

≥ C9H20 ALKANE	20
DECANE OR ISOMER	70
≥ C10H24 ALKANE	30
CYCLOHEXANE, (1-METHYLPROPYL)-	20
≥ C9H20 ALKANE	20
NAPHTHALENE, DECAHYDRO-, TRANS-	20
UNDECANE OR ISOMER	60
≥ C11H24 ALKANE	20
HEXADECANOIC ACID, BUTYL ESTER	20
≥ C13H32 ALKANE	10
≥ C15H32 ALKANE	20
OCTADECANOIC ACID, BUTYL ESTER	20
≥ C14H30 ALKANE	30
≥ C15H32 ALKANE	10

S-68 (CONT'D)

UNKNOWN	9
≥ C20H44 ALKANE	40
POSSIBLE ≥ C13H340 ISOMER	40
≥ C15H32 ISOMER	10
POSSIBLE ≥ C18H340 ISOMER	80
UNKNOWN	100

S-69

POSSIBLE CARBOXYLIC ACID	500
POSSIBLE CARBOXYLIC ACID	4000
UNKNOWN	300
POSSIBLE CARBOXYLIC ACID	100
UNKNOWN	200
UNKNOWN	1000
BENZOTHAZOLE	100
UNKNOWN, POSSIBLY OXYGENATED	200
NONANOIC ACID OR ISOMER	1000
UNKNOWN	100
≥ C10H180 ISOMER	200
≥ C9H1802 ACID ISOMER	200
UNKNOWN	200
HEXADECANOIC ACID	6000
UNKNOWN	200
UNKNOWN OXYGENATED COMPOUND	800
≥ C20H42 ALKANE	300
≥ C20H42 ALKANE	300
≥ C20H42 ALKANE	200
UNKNOWN	200

S-70

METHANE, TRICHLORO	2
BENZENE	1
CYCLOHEXENE	1
UNKNOWN	.2
UNKNOWN	.4
UNKNOWN	.2
UNKNOWN	.7
UNKNOWN	10
UNKNOWN	.2
UNKNOWN	.2
UNKNOWN	.1
UNKNOWN	.2
UNKNOWN HYDROCARBON	.4
UNKNOWN	.2
UNKNOWN HYDROCARBON	.2
UNKNOWN	.9
UNKNOWN HYDROCARBON	.9
UNKNOWN	.6
UNKNOWN	.4
UNKNOWN HYDROCARBON	.7

SAMPLES ANALYZED BY WESTERN RESEARCH INSTITUTE (CLP)
INTECH (CLP)

APPENDIX B

8/1/90 DRUM SAMPLING RESULTS



River Center, 111 North Canal Street, 8th Floor, Suite 855,
Chicago, IL 60606 • (312) 993-1067 • FAX (312) 993-0226

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
PA CONTRACT 68-01-7367

Mr. Duane Heaton
Deputy Project Officer
Emergency Support Section, 5 HS-12
U.S. Environmental Protection Agency
230 South Dearborn St.
Chicago, Illinois 60604

September 25, 1990

TAT-05-G2-02116

Re: Torch Lake Site Investigation, Hubbell, Michigan
TDD# 5-9007-31

Dear Mr. Heaton:

On July 30, 1990, the U.S. Environmental Protection Agency (U.S. EPA) tasked the Technical Assistance Team (TAT) to collect samples of suspected hazardous material from drums located along the shoreline of Torch Lake in Hubbell, Michigan (Figure 1). Torch Lake has been on the U.S. EPA's National Priorities List since 1984. This letter report provides details of the sampling conducted by TAT at Torch Lake, along with analytical results.

Previously, on June 21, 1989, the U.S. EPA tasked the TAT to collect eight drum and five soil samples from the western and northern shores of Torch Lake (TDD# 05-8906-06). Subsequent analysis indicated the samples were non-hazardous (Attachment B).

On August 1, 1990, the TAT returned to the Torch Lake area to sample additional drums suspected of containing hazardous material. The TAT collected a total of nine drum samples along the western shoreline of Torch Lake at four different locations: near the old electric plating warehouse 1/4 mile south of the Lake Linden village limits; at a stamping pad foundation 3/4 mile south of Hubbell off of M-26; at two lagoons in Tamarack City; and at a site east of M-26 near Mason (Figure 2). The location of each sampling point is as follows:

- o Location 1 - Lake Linden. The TAT sampled four drums that were situated directly behind an old electroplating warehouse, along the lake's shoreline, on a south facing bank, adjacent to an old brick foundation (Sample Numbers: S-63, S-64, S-65, S-66).
- o Location 2 - Hubbell. The TAT sampled one drum that was located behind a stamping pad foundation, along copper tailings that ran perpendicular to Torch Lake (Sample Number: S-67).

*near Ahmule Mill (?)
down of bldg after the Sale*

WESTON

Mr. Duane Heaton

-4-

September 25, 1990

- o Location 3 - Tamarack City. The TAT sampled two drums that were located along the eastern slope of an embankment above two wastewater lagoons (Sample Numbers: S-70, S-71).
- o Location 4 - Mason. The TAT sampled two drums that were located in the woods on the east side of highway M-26, off an access road to Torch Lake (Sample Numbers: S-68, S-69).

On August 7, 1990, the TAT sent the samples to EMS Heritage Laboratories in Darien, Illinois under TAT Analytical Services TDD# 05-9008-L1. The laboratory analyzed the samples for flashpoint, toxicity characteristic leaching procedure (TCLP) metals, F-Listed waste solvent scan, volatile organic compounds (VOC), and semi-volatile organic compounds (acid/base/neutrals).

On August 24, 1990, the TAT received the analytical results from EMS Heritage Laboratories. The analytical results indicated that drum sample S-68 is a Resource Conservation and Recovery Act (RCRA) F-Listed hazardous waste (40 CFR Part 261.31). The F-Listed waste constituents identified in sample S-68 were: methyl isobutylketone, o-dichlorobenzene, m,p-cresol, o-cresol, total xylene, and styrene. The analytical data also indicated the presence of several different VOCs in drum samples S-64, S-66, S-67, and S-69. The analytical results, which are summarized in Tables 1, 2, and 3, did not indicate the presence of RCRA hazardous waste in any other drum samples.

At the request of U.S. EPA On-Scene Coordinator (OSC) Walter Nied, the TAT prepared a draft action memo (Attachment C) for a removal action at the Torch Lake site. The draft action memo was submitted to OSC Nied on September 5, 1990.

Should you have any questions or require additional information, please feel free to contact us.

Very truly yours,

ROY F. WESTON, INC.

Sally Matz
For Douglas D. Lacey
Environmental Geologist

William R. Doyle
William R. Doyle
Technical Assistance Team
Leader, Region V

DL/jbb
att.

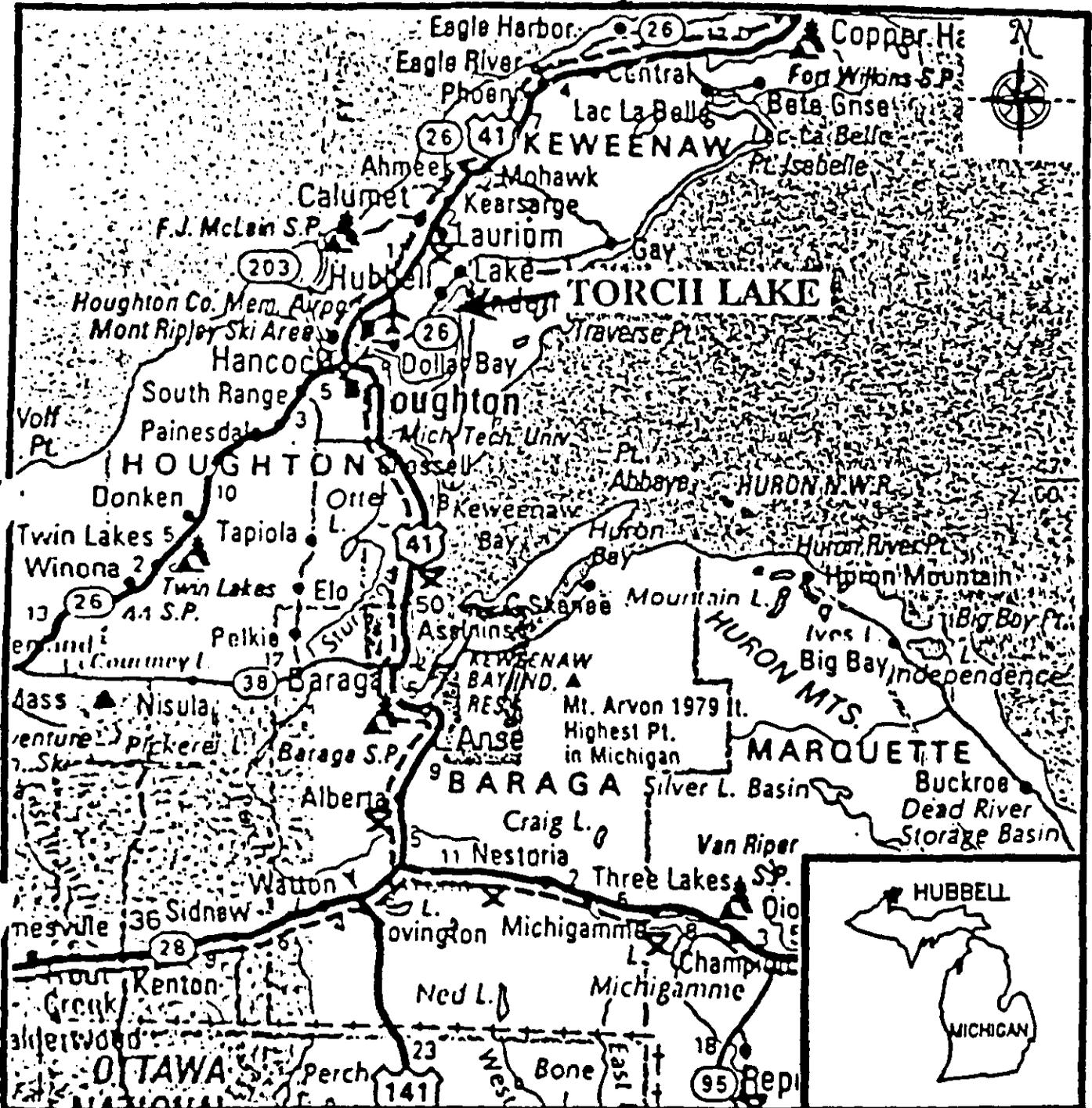


FIGURE 1

SITE LOCATION MAP

TORCH LAKE SITE INVESTIGATION

HUBBELL, MICHIGAN

SCALE: 1 INCH = 10 MILES



MAJOR PROGRAMS DIVISION

REGION V TECHNICAL ASSISTANCE TEAM

DRAWN BY, J.M. J. McCORMACK	DATE 8-31-90	PCS # 2833
APPROVED BY, J. BOECKMAN	DATE 8-31-90	TDD # 5-9007-31



TABLE 1

ANALYTICAL RESULTS OF TAT SAMPLING*
TOXICITY CHARACTERISTIC LEACHING PROCEDURE-METALS ANALYSIS
TORCH LAKE SITE INVESTIGATION
HUBBELL, MICHIGAN
August 1, 1990

(All Results in mg/l)

Sample Number	S-63	S-65	S-70	S-71	
Sample Description	Light Brown Solid	Sandy Brown Solid	Gray Lava-Like Solid	Gray Lava-Like Solid	
TCLP Metals					TCLP Regulatory Level
Arsenic	ND	ND	ND	ND	5.0
Barium	ND	ND	ND	ND	100.0
Cadmium	ND	ND	ND	ND	1.0
Chromium	ND	ND	0.088	ND	5.0
Lead	ND	ND	ND	ND	5.0
Mercury	ND	ND	ND	ND	0.2
Selenium	ND	ND	ND	ND	1.0
Silver	ND	ND	ND	ND	5.0

* Analysis conducted by EMS Heritage Laboratories, Inc., Darien, Illinois, under TAT Analytical Services TDD# 05-9008-L1.

ND - Not detected at method detection limits.

TABLE 2

ANALYTICAL RESULTS OF TAT SAMPLING*
 F001-F005 SOLVENT SCAN, VOC ANALYSIS, AND FLASH POINT
 TORCH LAKE SITE INVESTIGATION
 HUBBELL, MICHIGAN
 August 1, 1990

Sample Number	S-68				
Sample Description	Black-Colored Liquid				
**** F001-F005 Solvent Scan Compound -- Concentration (mg/kg) ****					
Methanol	--	ND	Nitrobenzene	--	ND
Ethyl Ether	--	ND	M,P-Cresol	--	13,000
1,2-Trichloro-			Trichlorofluoromethane	--	ND
1,2,2-Trifluoroethane	--	ND	Acetone	--	ND
Carbon Disulfide	--	ND	Methylene Chloride	--	ND
Methyl Ethyl Ketone	--	ND	Ethyl Acetate	--	ND
1,1,1-Trichloroethane	--	ND	Benzene	--	ND
Isobutanol	--	ND	Trichloroethylene	--	ND
N-Butanol	--	ND	2-Nitropropane	--	ND
2-Ethoxyethanol	--	ND	Pyridine	--	ND
Methyl Isobutylketone	--	130	Toluene	--	ND
Tetrachloroethylene	--	ND	1,1,2-Trichloroethane	--	ND
Ethyl Benzene	--	ND	Chlorobenzene	--	ND
Xylene (Total)	--	2,300	O-Cresol	--	10,000
Cyclohexanone	--	ND	O-Dichlorobenzene	--	9,800

**** Volatile Organic Compound -- Concentration (mg/kg) ****

Trichlorofluoromethane	--	ND
Carbon Disulfide	--	ND
Styrene	--	1,200
Xylene (Total)	--	1,900

**** Flash Point -- Degrees Fahrenheit ****

Flash Point -- 180° F

* Analysis conducted by EMS Heritage Laboratories, Inc., Darien, Illinois, under TAT Analytical Services TDD# 05-9008-L1.

ND - Not detected at method detection limits.

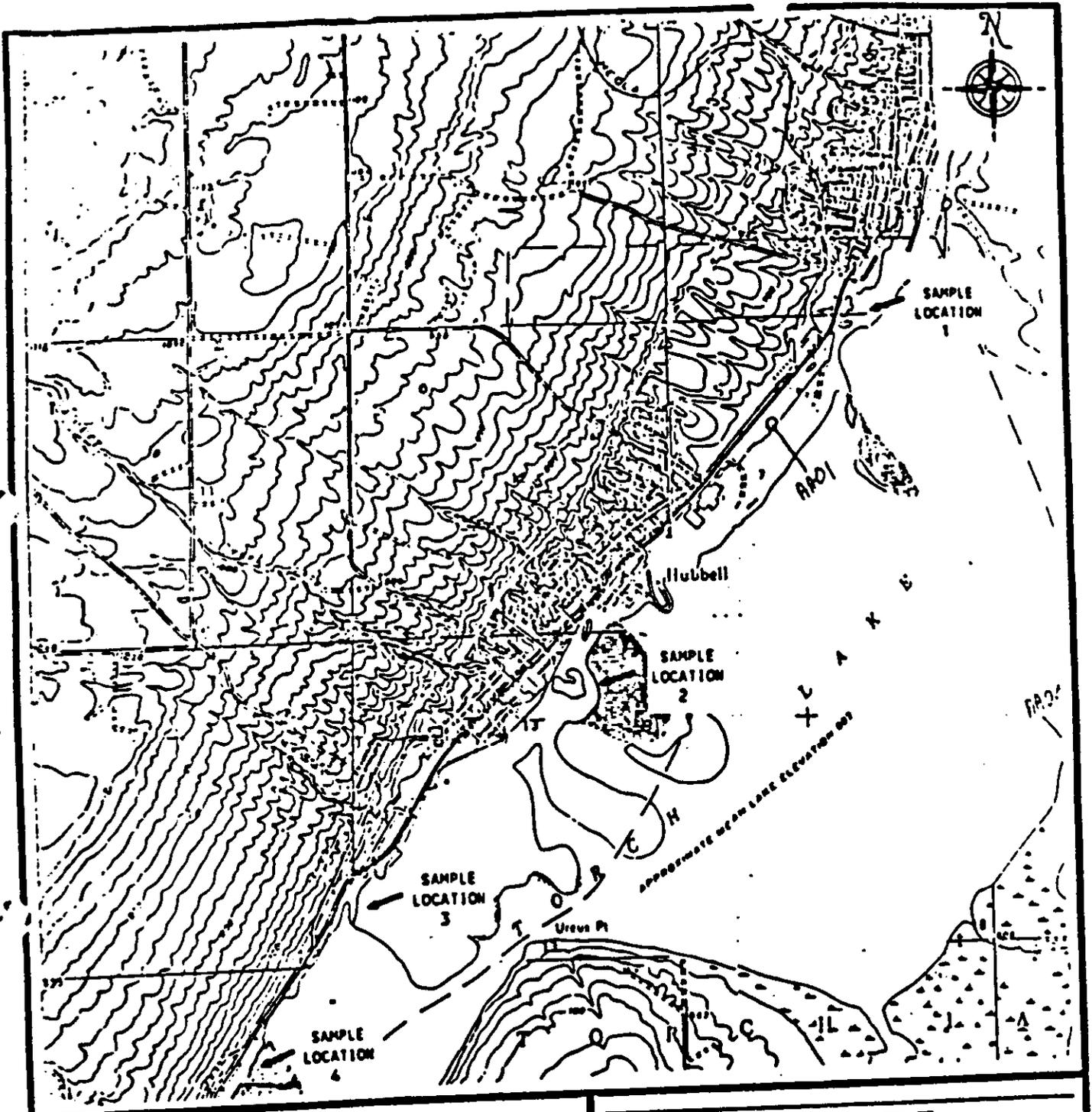


FIGURE 2
 SAMPLE LOCATION MAP
 TORCH LAKE SITE INVESTIGATION
 HUBBELL, MICHIGAN
 SCALE: 1 INCH = 1 MILE

WESTON MAJOR PROGRAMS DIVISION
MANAGEMENT SERVICES/CONSULTANTS
 REGION V TECHNICAL ASSISTANCE TEAM

DRAWN BY J. McCORMACK	DATE 8-31-90	PCS # 2833
APPROVED BY J. BOECKMAN	DATE 8-31-90	TDD # 5-9007-31

TABLE 3

ANALYTICAL RESULTS OF TAT SAMPLING^a
 VOLATILE AND SEMI-VOLATILE ORGANIC COMPOUND ANALYSIS
 TORCH LAKE SITE INVESTIGATION
 HUBBELL, MICHIGAN
 August 1, 1990

(All Results in ug/kg)

Sample Number	S-64	S-66	S-67	S-69
Sample Description	Tar-Like Semi-Solid	Black Peat-Like Solid	Tar-Like Semi-Solid	Tar-Like Semi-Solid
Volatile Organic Compound (VOC)		Concentration		
Acetone	2,000 ^b	5,800	ND	ND
Benzene	ND	170 ^c	ND	ND
Ethylbenzene	47 ^c	ND	ND	270 ^c
2-Hexanone	ND	2,500	ND	ND
1,2-Dichloroethene	ND	ND	1,600	ND
Methylethylketone	ND	2,000	ND	ND
Trichloroethene	ND	ND	13,000 ^c	ND
Toluene	53 ^c	160 ^c	200	9,600
Other VOC's	ND	ND	ND	ND
Semi-Volatile Organic Compound		Concentration		
All compounds	ND	ND	ND	ND

^a Analysis conducted by EMS Heritage Laboratories, Inc., Darien, Illinois, under TAT Analytical Services TDD# 05-9008-L1.

^b Detected in Laboratory Blank.

^c Estimated concentration.

ND - Not detected at method detection limits.



PHOTO NO: 01
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Solid drum sample #63 was collected along shoreline near an abandoned plating warehouse (Location 1). Sample appeared light brown and powdery.
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *[Signature]*

PHOTO NO: 02
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Drum sample #64 was collected on the shoreline near abandoned plating warehouse (Location 1). Sample was a tar-like semisolid and black in color.
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *[Signature]*

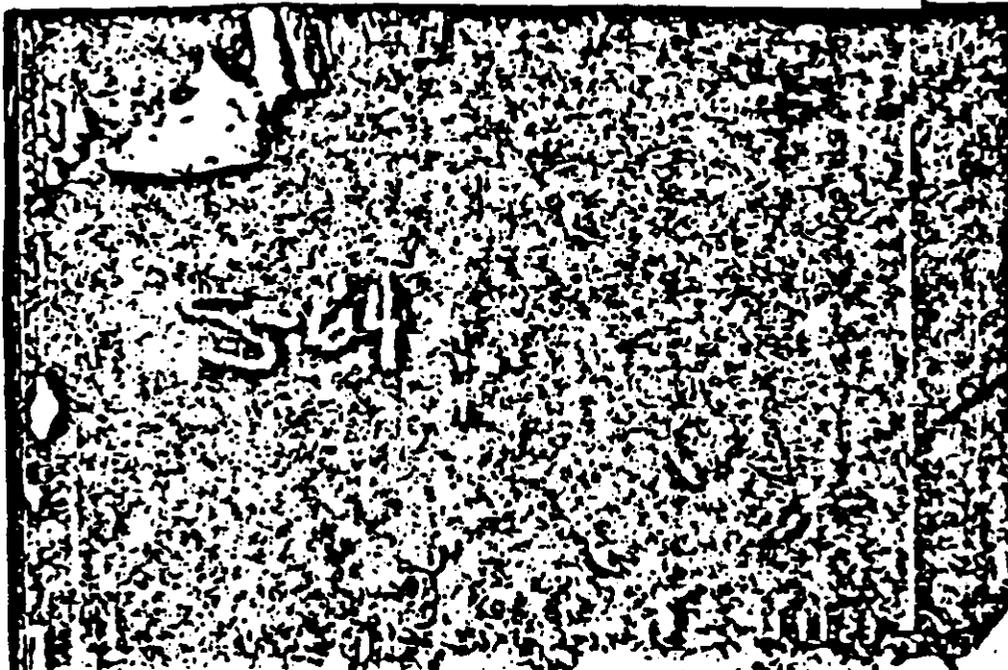




PHOTO NO: 03
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Solid drum sample #65 was collected in a shoreline cove near the abandoned plating warehouse (Location 1). Sample had a sandy brown appearance.
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *[Signature]*

PHOTO NO: 04
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Solid drum sample #66 was collected in a shoreline cove near the abandoned plating warehouse (Location 1). Sample was peat-like and black in color.
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *[Signature]*





PHOTO NO: 05
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Drum Sample #67 was collected within copper tailings near the city of Tamarack (Location 2). Sample was a tar-like semisolid and black in color.
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *[Signature]*

PHOTO NO: 06
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Liquid drum Sample #68 was collected in the woods between the State Route 41 and the lake (Location 4). Sample was a black colored liquid.
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *[Signature]*





PHOTO NO: 07
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Drum Sample #69 was collected
in the woods, between State
Route 41 and the lake (Lo-
cation 4). Sample was a tar-
like semisolid.
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *DL*

PHOTO NO: 08
SITE NAME: TORCH LAKE SAMPLING
Hubbell, Michigan
DESCRIPTION: Solid drum sample #70 was
collected along a bank near
the old wastewater treatment
lagoons (Location 3). Sample
appeared lava-like
DATE: 08-01-90
PHOTOGRAPHER: D. Locy *DL*





PHOTO NO: 09
SITE NAME: TORCH LAKE SAMPLING

DESCRIPTION: Hubbard, Michigan
Solid drum sample #71 was
collected along a bank near
the old wastewater treatment
lagoons (Location 3). Sample
appeared lava-like.

DATE: 08-01-90
PHOTOGRAPHER: D. Loey *DL*

APPENDIX C

CHAIN OF CUSTODY FORMS



ANALYTICA INCORPORATED

CHAIN OF CUSTODY RECORD

18000 W. High. , 72
Golden, Colorado 80403
(303) 420-4449 or 1-800-873-8707
FAX: (303) 420-1434

CLIENT NAME GERAGHY & MILLER			CLIENT CONTACT GARI KRUGER				ANALYTICA USE ONLY	
CLIENT ADDRESS 75 E. WACKER, SE. 1100 CHICAGO, IL 60601			PROJECT ID/DESCRIPTION CI112.02				CSN C35891	
TELEPHONE 312/263-6703			P.O. NO. CI112.02		TESTS REQUESTED			LGN _____
FAX 312/263-7897								LOC _____
Sample Matrix (circle one) WATER SOIL OIL SLUDGE OTHER (specify) MISC. SOLID PRODUCTS (NOTE: use one Chain of Custody per matrix)			NO. OF BOTTLES	VDA(TCL)	BVA(TCL)	IGNIT.	TCLP-MULTRES	OC _____
DATE	TIME	CLIENT ID						
9/20/01	0930	DS-01	3	X	X	X	X	DUE _____
	0935	DS-02	3					
	0940	DS-03	3					
	0910	DS-04	3					
	0900	DS-05	3					
	0905	DS-06	3					
	0845	DS-07	3					
	0915	DS-08	3					
	1030	DS-09	3					
	1015	DS-10	3					
	1010	DS-11	3					
	1045	DS-12	3					
	1050	DS-13	3					
COMMENTS SOME SAMPLES MAY BE GREASY IN NATURE.							MEANS OF DELIVERY	
RELINQUISHED BY Greg U. Key	DATE/TIME 9/20/01/1200	RECEIVED BY	DATE/TIME	RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	



ANALYTICA INCORPORATED

18000 W. Highway 72
Golden, Colorado 80403
(303) 420-4449 or 1-800-873-8707
FAX: (303) 420-1434

CHAIN OF CUSTODY RECORD

CLIENT NAME GARAGHTY & MILLER		CLIENT CONTACT GARY KRUGER		ANALYTICA USE ONLY															
CLIENT ADDRESS 75 E. WACKER, STE 1100 CHICAGO, IL 60601		PROJECT ID/DESCRIPTION CI112.02						CSN C35891											
TELEPHONE 312/263-6703		P. O. NO. CI112.02						LGN _____											
FAX 312/263-7897				TESTS REQUESTED				LOC _____											
Sample Matrix (circle one) WATER SOIL OIL SLUDGE OTHER (specify) MISC. SOLID PRODUCTS (NOTE: use one Chain of Custody per matrix)				NO. OF BOTTLES	VOA (TCL)	DVA (TCL)	KNIT.	TCLP-METALS					OC _____						
DATE	TIME	CLIENT ID															PM _____		
9/20/01	1100	DS-14	3	X	X	X	X									DUE _____			
" " "	0935	DS-15	3	X	X	X	X												
" " "	1110	DS-16	3	X	X	X	X												
9/20/01	1200	Acting																	
COMMENTS SOME SAMPLES MAY BE GREASY IN NATURE.												MEANS OF DELIVERY							
RELINQUISHED BY [Signature]		DATE/TIME 9/20/01/1200		RECEIVED BY		DATE/TIME		RELINQUISHED BY		DATE/TIME		RECEIVED BY		DATE/TIME					



ANALYTICA INCORPORATED

CHAIN OF CUSTODY RECORD

18000 W. Highway 72
Golden, Colorado 80403
(303) 420-4449 or 1-800-873-8707
FAX: (303) 420-1434

CLIENT NAME <i>GERAGHTY & MILLER</i>			CLIENT CONTACT <i>GARY KRUGER</i>				ANALYTICA USE ONLY																			
CLIENT ADDRESS <i>75 E. WALKER DR., STE. 1100 CHICAGO, IL 60601</i>			PROJECT ID/DESCRIPTION <i>CI11202</i>														CSN <i>C-191</i>									
TELEPHONE <i>312/263-6703</i> FAX <i>312/263-7997</i>			P. O. NO. <i>CI11202</i>														LGN _____ LOC _____ QC _____ PM _____ DUE _____									
Sample Matrix (circle one) WATER SOIL OIL SLUDGE OTHER (specify) (NOTE: use one Chain of Custody per matrix)			NO. OF BOTTLES	VOA (TCL)	BNA (TCL)	IGNIT.	TCLP-METALS	TESTS REQUESTED																		
DATE	TIME	CLIENT ID																								
<i>9/20/91</i>	<i>0800</i>	<i>LW-01</i>	<i>13</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>																			
<i>"</i>	<i>-</i>	<i>- TRIP BLANK -</i>	<i>1</i>	<i>X</i>																						
COMMENTS													MEANS OF DELIVERY													
RELINQUISHED BY <i>Gary W. Kruger</i>			DATE/TIME <i>9/20/91 / 1200</i>			RECEIVED BY			DATE/TIME			RELINQUISHED BY			DATE/TIME			RECEIVED BY			DATE/TIME					



18000 W. Highway, #2
 Golden, Colorado 80403
 (303) 420-4449 or 1-800-873-8707
 FAX: (303) 420-1434

CHAIN OF CUSTODY RECORD

CLIENT NAME GERAGHTY & MILLER			CLIENT CONTACT GARY KRUGER				ANALYTICA USE ONLY		
CLIENT ADDRESS 75 E. WACKER, STE. 1100 CHICAGO, IL 60601			PROJECT ID/DESCRIPTION CI112.02						CSN C-5791
TELEPHONE 312/263-6703 FAX 312/263-7897			P. O. NO. CI112.02						LGN _____ LOC _____ QC _____ PM _____ DUE _____
Sample Matrix (circle one) WATER SOIL OIL SLUDGE OTHER (specify) LAM-LIKE SOLIDS (NOTE: use one Chain of Custody per matrix)			NO. OF BOTTLES	VQA (TEC)	SWA (TEC)	IGNTF	TECP-METALS		
DATE	TIME	CLIENT ID							
9/2/91	0930	SL-01	2	X	X	X	X		
9/2/91	0930	SL-02	2	X	X	X	X		
9/2/91	0930	SL-03	1				X		
9/2/91	0930	SL-04	1				X		
COMMENTS Analyze for TECP-METALS only.								MEANS OF DELIVERY	

RELINQUISHED BY <i>[Signature]</i>	DATE/TIME 9/2/91 / 1200	RECEIVED BY	DATE/TIME	RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
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APPENDIX D

9/20/91 DRUM SAMPLING DATA



an Analytica Group company

18000 W. Highway 72, Golden, CO 80403, (303) 420-4449, (800) 873-8707, FAX: (303) 420-1434

RESULTS AND DISCUSSION

FOR

GERAGHTY & MILLER

LGN: 91-09-148

The samples were prepared and analyzed for inorganic and organic parameters according to the methods referenced below.

INORGANIC NARRATIVE

Test Methods for Evaluating Solid Waste, USEPA SW-846, third edition, September 1986, was used for the ignitability method. Statement of Work for Inorganic Analyses, ILM01.0 was used as the source for other analytical methods.

Ignitability results were corrected to one atmosphere (sea level). Quality control data are indicative of acceptable method.

The samples were extracted in accordance with Method 1311, Toxicity Characteristic Leaching Procedure (TCLP). The samples contained less than 100 grams of material. Therefore, the samples were extracted with an amount of extraction fluid equal to 20 times the weight of the sample in accordance with TCLP methodology.

Lead was noted to exceed the TCLP Maximum Contaminant Level (MCL) for samples DS-01, DS-02 and DS-08 (91-09-148-1,2 and 8); Cadmium for samples DS-02 and DS-08 (91-09-148-2 and 91-09-148-3). All of the remaining metals were noted to be below the TCLP Maximum Contaminant Level (MCL). * Please note the enclosed appendix regarding TCLP MCL's. Ignitability results were corrected to one atmosphere (sea level).

Two method blanks were extracted, digested and analyzed with your samples. No contamination was found in method blank number one. Contamination of 22.2 ppb chromium and 8.6 ppb lead was determined in method blank number two. The samples were not corrected for this contamination. CLP documentation and protocol were maintained for this project. Quality control data are indicative of acceptable method and instrument performance. Some interferences were noted by poor matrix spike recovery during graphite furnace analysis. In all instances, a post digest spike was added to each sample as a means of ensuring accurate quantitations.

* EXCEPTION: DS-03 EXCEEDED TCLP MCL for Barium.

JWX



an Analytica Group company

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ANALYTICAL RESULTS

FOR

GERAGHTY & MILLER

LGN: 91-09-148

<u>ANALYTICA ID</u>	<u>CLIENT ID</u>	<u>DATE SAMPLED</u>
91-09-148-1	DS-01	9-20-91
91-09-148-2	DS-02	9-20-91
91-09-148-3	DS-03	9-20-91
91-09-148-4	DS-04	9-20-91
91-09-148-5	DS-05	9-20-91
91-09-148-6	DS-06	9-20-91
91-09-148-7	DS-07	9-20-91
91-09-148-8	DS-08	9-20-91
91-09-148-9	DS-09	9-20-91
91-09-148-10	DS-10	9-20-91
91-09-148-11	DS-11	9-20-91
91-09-148-12	DS-12	9-20-91
91-09-148-13	DS-13	9-20-91
91-09-148-14	DS-14	9-20-91
91-09-148-15	DS-15	9-20-91
91-09-148-16	DS-16	9-20-91
91-09-148-17	SL-01	9-20-91
91-09-148-18	SL-02	9-20-91
91-09-148-19	SL-03	9-20-91
91-09-148-20	SL-04	9-20-91

Date of Analysis:

<u>ICP</u>	<u>Arsenic</u>	<u>Lead</u>	<u>Mercury</u>	<u>Selenium</u>
9-30-91	10-1-91	9-30-91	9-26-91	9-30-91
		10-1-91		
		10-2-91		

Arsenic, Lead and Selenium were analyzed by Graphite Furnace atomic Absorption (GFAA)
Mercury ws analyzed by Cold Vapor Atomic Absorption (CVAA)



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ANALYTICA INCORPORATED

RAW DATA EXPLANATION

ICP RAW DATA

ICP raw data output is mg/L in solution unless noted otherwise. All dilution factors have been applied to the raw data. STD 1 is the Calibration Blank; STD 2, STD 3, and STD 4 are the Instrument Calibration solutions. The certified values used for calibration are: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Mo, Ni, Ag, V, Zn at 1.0 mg/L; Al, Fe, Tl at 10.0 mg/L; Ca, Mg, K, Na at 100 mg/L.

GFAA RAW DATA

GFAA raw data output is the concentration of the aliquot in $\mu\text{g/L}$ (ppb). Concentrations are reported to Instrument Detection Limit (IDL). Final concentrations are reported in $\mu\text{g/L}$ for aqueous samples and mg/kg wet weight for solid samples.

MERCURY RAW DATA

The initial output of the Mercury analysis (PREP'D CONC.) $\mu\text{g/L}$. This value is then corrected for the analysis aliquot and sample weight to yield concentrations in $\mu\text{g/L}$ for aqueous samples and $\mu\text{g/kg}$ (wet) for solid samples. Solid samples containing high Hg concentrations are usually diluted by adding a 10.0 mL aliquot of the prepared sample (0.2 g to 136.5 total mL), to a prepared blank, for a 13.6X serial dilution.

WET CHEMISTRY RAW DATA

The detection limit used is equal to the value of the lowest standard analyzed and is in fact a Limit of Quantitation (LOQ). The Initial Calibration Verification (ICV) sample is a certified standard (when available) and is matrix matched if possible. This sample is also used as the Laboratory Control Sample (LCS).



DATA QUALIFIER DEFINITIONS
(INORGANIC)

"C" - CONCENTRATION

- B** = The reported value is less than Contract Required Detection Limit (CRDL), but greater than or equal to Instrument Detection Limit (IDL).
NA = Not Analyzed.
ND = Not Detected.
U = Not Detected.

"Q" - QUALIFIER

- E** = The reported value is estimated due to an interference; see results and discussion for explanation.
M = Duplicate injection precision for Graphite Furnace AA not met.
N = The Matrix Spike sample recovery is outside USEPA control limits.
S = The reported value was determined by the Method of Standard Additions (MSA).
W = The post-digestion (analytical) spike for GFAA is outside USEPA control limits (85%-115%) while the sample absorbance is less than 50% of the spike absorbance.
***** = Duplicate analysis is outside USEPA control limits.
+ = The MSA correlation coefficient is less than 0.995.

"M" - METHOD

- A** = Flame Atomic Absorption.
AS = Semi-Automated Spectrophotometer.
C = Manual Spectrophotometer.
CV = Manual Cold Vapor Atomic Absorption.
F = Graphite Furnace Atomic Absorption.
P = Inductively Coupled Plasma Emission Spectroscopy.
NR = Not Required.
WET = Wet Chemistry method.

"R" and "RPD"

- NC** = Not Calculated.



ANALYTICA
-I-N-C-O-R-P-O-R-A-T-E-D-

**DATA QUALIFIER DEFINITIONS
(ORGANIC)**

- U** - The material was analyzed for, but was not detected. The associated numerical value is the estimated sample quantitation limit.
- J** - The associated numerical value is an estimated quantity because the amount detected is below the required limits, tentatively identified compound quantitation or due to quality control criteria outside of control limits.
- B** - Compound was detected in the blank.
- A** - Suspected aldol condensation product.
- D** - Data associated with a dilution/analysis.
- E** - Associated data estimated due to the presence of target analytes at levels exceeding the documented linear calibration range.



an Analytica Group company

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RESULTS AND DISCUSSION

FOR

GERAGHTY & MILLER

LGN: 91-09-147

ORGANIC NARRATIVE

Statement of Work for Organic Analyses, SOW-288, Revisions 9/88 and 4/89 were used for the analysis of volatile organic (VOA) and semivolatile organic (SVOA) analytes.

The EPA recommended analytical and extraction holding times were met for all of the samples

Quality control results are indicative of proper instrument and method performance.



an Analytica Group company

18000 W. Highway 72, Golden, CO 80403. (303) 420-4449. (800) 873-8707, FAX: (303) 420-1434

RESULTS AND DISCUSSION

FOR

GERAGHTY & MILLER

LGN: 91-09-148

ORGANIC NARRATIVE

Statement of Work for Organic Analyses, SOW-288, Revisions 9/88 and 4/89 were used for the analysis of volatile organic (VOA) and semivolatile organic (SVOA) analytes.

The EPA recommended analytical and extraction holding times were met for all of the samples. Sample DS-10 requires a re-extraction and re-analysis due to depressed surrogate standard recoveries for the semivolatile analysis. The original results are being submitted for this sample. The re-extracted and re-analyzed results will be forwarded to Geraghty and Miller as soon as possible. The sample matrix posed substantial extraction and analysis difficulties. Consequently, numerous quality control results reported herein are outside acceptance limits. Re-analysis of each sample was performed in order to verify the results.

Quality control results are indicative of proper instrument and method performance.



an Analytica Group company

18000 W. Highway 72, Golden, CO 80403, (303) 420-4449, (800) 873-8707, FAX: (303) 420-1434

ANALYTICAL RESULTS

FOR

GERAGHTY & MILLER

LGN: 91-09-148
PARAMETER: Ignitability
UNITS: °F at 1 atmosphere
DATE RECEIVED: 9-21-91

<u>ANALYTICA ID</u>	<u>CLIENT ID</u>	<u>DATE SAMPLED</u>	<u>CONCENTRATION</u>
91-09-148-1	DS-01	9-20-91	No Flash to 210
91-09-148-2	DS-02	9-20-91	No Flash to 210
91-09-148-3	DS-03	9-20-91	No Flash to 210
91-09-148-4	DS-04	9-20-91	No Flash to 210
91-09-148-5	DS-05	9-20-91	No Flash to 210
91-09-148-6	DS-06	9-20-91	No Flash to 210
91-09-148-7	DS-07	9-20-91	No Flash to 210
91-09-148-8	DS-08	9-20-91	No Flash to 210
91-09-148-9	DS-09	9-20-91	No Flash to 210
91-09-148-10	DS-10	9-20-91	No Flash to 210
91-09-148-11	DS-11	9-20-91	No Flash to 210
91-09-148-12	DS-12	9-20-91	No Flash to 210
91-09-148-13	DS-13	9-20-91	No Flash to 210
91-09-148-14	DS-14	9-20-91	No Flash to 210
91-09-148-15	DS-15	9-20-91	No Flash to 210
91-09-148-16	DS-16	9-20-91	No Flash to 210

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 46

DS-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480111

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 7.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	11.	U
74-83-9	-----Bromomethane	11.	U
75-01-4	-----Vinyl Chloride	11.	U
75-00-3	-----Chloroethane	11.	U
75-09-2	-----Methylene Chloride	12.	B
67-64-1	-----Acetone	21.	
75-15-0	-----Carbon Disulfide	5.	U
75-35-4	-----1,1-Dichloroethene	5.	U
75-34-3	-----1,1-Dichloroethane	5.	U
540-59-0	-----trans-1,2-Dichloroethene	5.	U
156-59-2	-----cis-1,2-Dichloroethene	5.	U
67-66-3	-----Chloroform	5.	U
107-06-2	-----1,2-Dichloroethane	5.	U
78-93-3	-----2-Butanone	11.	U
71-55-6	-----1,1,1-Trichloroethane	5.	U
56-23-5	-----Carbon Tetrachloride	5.	U
75-27-4	-----Bromodichloromethane	5.	U
78-87-5	-----1,2-Dichloropropane	5.	U
10061-01-5	-----cis-1,3-Dichloropropene	5.	U
79-01-6	-----Trichloroethene	5.	U
124-48-1	-----Dibromochloromethane	5.	U
79-00-5	-----1,1,2-Trichloroethane	5.	U
71-43-2	-----Benzene	5.	U
10061-02-6	-----trans-1,3-Dichloropropene	5.	U
75-25-2	-----Bromoform	5.	U
108-10-1	-----4-Methyl-2-Pentanone	11.	U
591-78-6	-----2-Hexanone	11.	U
127-18-4	-----Tetrachloroethene	5.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	5.	U
108-88-3	-----Toluene	5.	U
108-90-7	-----Chlorobenzene	5.	U
100-41-4	-----Ethylbenzene	5.	U
100-42-5	-----Styrene	5.	U
1330-20-7	-----m+p-Xylenes	5.	U
95-47-6	-----o-Xylene	5.	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DS-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) 0

Lab File ID: 091480111

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 7.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 10

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	17.98	10.	J
2.	UNKNOWN	19.57	10.	J
3.	UNKNOWN HYDROCARBON	20.32	20.	J
4.	UNKNOWN HYDROCARBON	20.62	10.	J
5.	UNKNOWN HYDROCARBON	20.73	20.	J
6.	UNKNOWN HYDROCARBON	21.13	20.	J
7.	UNKNOWN HYDROCARBON	21.47	8.	J
8.	UNKNOWN HYDROCARBON	22.23	20.	J
9.	UNKNOWN HYDROCARBON	22.47	10.	J
10.	UNKNOWN	22.60	8.	J
11.				
12.				
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 091480111

Level: (low/med) LDM

Date Received: 9/21/91

X Moisture: not dec. 7.

dec. 0.

Date Extracted: 9/23/91

Extraction: (Sepf/Cont/Sonc) SONG

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor:

1.00

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/kg) ug/kg g

108-95-2	Phenol	360.	IU
111-44-4	bis(2-Chloroethyl)ether	360.	IU
95-57-8	2-Chlorophenol	360.	IU
541-73-1	1,3-Dichlorobenzene	360.	IU
106-46-7	1,4-Dichlorobenzene	360.	IU
100-51-6	Benzyl Alcohol	360.	IU
95-50-1	1,2-Dichlorobenzene	360.	IU
95-48-7	2-Methylphenol	360.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	360.	IU
106-44-5	4-Methylphenol	360.	IU
621-64-7	N-Nitroso-di-n-propylamine	360.	IU
67-72-1	Hexachloroethane	360.	IU
98-95-3	Nitrobenzene	360.	IU
78-59-1	Isophorone	360.	IU
88-75-5	2-Nitrophenol	360.	IU
105-67-9	2,4-Dimethylphenol	360.	IU
65-85-0	Benzoic Acid	1800.	IU
111-91-1	bis(2-Chloroethoxy)Methane	360.	IU
120-83-2	2,4-Dichlorophenol	360.	IU
120-82-1	1,2,4-Trichlorobenzene	360.	IU
91-20-3	Naphthalene	360.	IU
106-47-8	4-Chloroaniline	360.	IU
87-68-3	Hexachlorobutadiene	360.	IU
59-50-7	4-Chloro-3-Methylphenol	360.	IU
91-57-6	2-Methylnaphthalene	360.	IU
77-47-4	Hexachlorocyclopentadiene	360.	IU
88-06-2	2,4,6-Trichlorophenol	360.	IU
95-95-4	2,4,5-Trichlorophenol	1800.	IU
91-58-7	2-Chloronaphthalene	360.	IU
88-74-4	2-Nitroaniline	1800.	IU
131-11-3	Dimethylphthalate	360.	IU
208-96-8	Acenaphthylene	360.	IU
606-20-2	2,6-Dinitrotoluene	360.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 091480111

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 7. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
99-09-2	3-Nitroaniline	1800.	1U
83-32-9	Acenaphthene	360.	1U
51-28-5	2,4-Dinitrophenol	1800.	1U
100-02-7	4-Nitrophenol	1800.	1U
132-64-9	Dibenzofuran	360.	1U
121-14-2	2,4-Dinitrotoluene	360.	1U
84-66-2	Diethylphthalate	360.	1U
7005-72-3	4-Chlorophenyl-phenylether	360.	1U
86-73-7	Fluorene	360.	1U
100-01-6	4-Nitroaniline	1800.	1U
534-52-1	4,6-Dinitro-2-Methylphenol	1800.	1U
86-30-6	N-Nitrosodiphenylamine (1)	360.	1U
101-55-3	4-Bromophenyl-phenylether	360.	1U
118-74-1	Hexachlorobenzene	360.	1U
87-86-5	Pentachlorophenol	1800.	1U
85-01-8	Phenanthrene	360.	1U
120-12-7	Anthracene	360.	1U
84-74-2	Di-n-butylphthalate	360.	1U
206-44-0	Fluoranthene	360.	1U
129-00-0	Pyrene	360.	1U
85-68-7	Butylbenzylphthalate	360.	1U
91-94-1	3,3'-Dichlorobenzidine	710.	1U
56-55-3	Benzo(a)anthracene	360.	1U
218-01-9	Chrysene	360.	1U
117-81-7	bis(2-Ethylhexyl)phthalate	81.	1BJ
117-84-0	Di-n-octylphthalate	360.	1U
205-99-2	Benzo(b)fluoranthene	360.	1U
207-08-9	Benzo(k)fluoranthene	360.	1U
50-32-8	Benzo(a)pyrene	360.	1U
193-39-5	Indeno(1,2,3-cd)pyrene	360.	1U
53-70-3	Dibenz(a,h)anthracene	360.	1U
191-24-2	Benzo(g,h,i)perylene	360.	1U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDQ No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) 0

Lab File ID: 091480111

Level: (low/med) LDW

Date Received: 9/21/91

% Moisture: not dec. 7. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 17

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN	3.82	500.	J A
2.	UNKNOWN	4.03	2000.	J A
3.	UNKNOWN	4.55	70000.	J A
4.	UNKNOWN	5.87	1000.	J A
5.	UNKNOWN	32.95	400.	J
6.	UNKNOWN	35.93	2000.	J
7.	UNKNOWN ACID	39.38	400.	J
8.	UNKNOWN HYDROCARBON	39.98	1000.	J
9.	UNKNOWN	41.45	1000.	J
10.	UNKNOWN	41.62	500.	J
11.	UNKNOWN	45.43	1000.	J
12.	UNKNOWN	45.63	1000.	J
13.	UNKNOWN	45.88	2000.	J
14.	UNKNOWN	46.12	900.	J
15.	UNKNOWN	46.65	500.	J
16.	UNKNOWN	46.80	2000.	J
17.	UNKNOWN	47.07	1000.	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-02

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480211

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 36.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3	-----Chloromethane	16.	U
74-83-9	-----Bromomethane	16.	U
75-01-4	-----Vinyl Chloride	16.	U
75-00-3	-----Chloroethane	16.	U
75-09-2	-----Methylene Chloride	38.	B
67-64-1	-----Acetone	85.	
75-15-0	-----Carbon Disulfide	8.	U
75-35-4	-----1,1-Dichloroethene	8.	U
75-34-3	-----1,1-Dichloroethane	8.	U
540-59-0	-----trans-1,2-Dichloroethene	8.	U
156-59-2	-----cis-1,2-Dichloroethene	8.	U
67-66-3	-----Chloroform	8.	U
107-06-2	-----1,2-Dichloroethane	8.	U
78-93-3	-----2-Butanone	23.	
71-55-6	-----1,1,1-Trichloroethane	8.	U
56-23-5	-----Carbon Tetrachloride	8.	U
75-27-4	-----Bromodichloromethane	8.	U
78-87-5	-----1,2-Dichloropropane	8.	U
10061-01-5	-----cis-1,3-Dichloropropene	8.	U
79-01-6	-----Trichloroethene	8.	U
124-48-1	-----Dibromochloromethane	8.	U
79-00-5	-----1,1,2-Trichloroethane	8.	U
71-43-2	-----Benzene	8.	U
10061-02-6	-----trans-1,3-Dichloropropene	8.	U
75-25-2	-----Bromoform	8.	U
108-10-1	-----4-Methyl-2-Pentanone	16.	U
591-78-6	-----2-Hexanone	16.	U
127-18-4	-----Tetrachloroethene	8.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	8.	U
106-88-3	-----Toluene	8.	U
108-90-7	-----Chlorobenzene	8.	U
100-41-4	-----Ethylbenzene	3.	U
100-42-5	-----Styrene	8.	U
1330-20-7	-----m+p-Xylenes	8.	U
95-47-6	-----o-Xylene	8.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-02

Lab Name: AI

Contract:

Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SDIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) 0

Lab File ID: 091480211

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 36.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	14.63	9.	J
2.				
3.				
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-02

Lab Name: AI Contract: SDG No.: 09148
 Lab Code: AI Case No.: SAS No.: Lab Sample ID:
 Matrix: (soil/water) SOIL Lab File ID: 0914802X1
 Sample wt/vol: 30.0 (g/mL) 0 Date Received: 9/21/91
 Level: (low/med) LOW Date Extracted: 9/23/91
 % Moisture: not dec. 36. dec. 0. Date Analyzed: 9/28/91
 Extraction: (SepF/Cont/Sonc) SONC Dilution Factor: 40.00
 GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
108-95-2	Phenol	21000.	IU
111-44-4	bis(2-Chloroethyl)ether	21000.	IU
95-57-8	2-Chlorophenol	21000.	IU
541-73-1	1,3-Dichlorobenzene	21000.	IU
106-46-7	1,4-Dichlorobenzene	21000.	IU
100-51-6	Benzyl Alcohol	21000.	IU
95-50-1	1,2-Dichlorobenzene	21000.	IU
95-48-7	2-Methylphenol	21000.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	21000.	IU
106-44-5	4-Methylphenol	3600.	J
621-64-7	N-Nitroso-di-n-propylamine	21000.	IU
67-72-1	Hexachloroethane	21000.	IU
98-95-3	Nitrobenzene	21000.	IU
78-59-1	Isophorone	21000.	IU
88-75-5	2-Nitrophenol	21000.	IU
105-67-9	2,4-Dimethylphenol	21000.	IU
65-85-0	Benzoic Acid	100000.	IU
111-91-1	bis(2-Chloroethoxy)Methane	21000.	IU
120-83-2	2,4-Dichlorophenol	21000.	IU
120-82-1	1,2,4-Trichlorobenzene	21000.	IU
91-20-3	Naphthalene	21000.	IU
106-47-8	4-Chloroaniline	21000.	IU
87-68-3	Hexachlorobutadiene	21000.	IU
59-50-7	4-Chloro-3-Methylphenol	21000.	IU
91-57-6	2-Methylnaphthalene	21000.	IU
77-47-4	Hexachlorocyclopentadiene	21000.	IU
88-06-2	2,4,6-Trichlorophenol	21000.	IU
95-95-4	2,4,5-Trichlorophenol	100000.	IU
91-58-7	2-Chloronaphthalene	21000.	IU
88-74-4	2-Nitroaniline	100000.	IU
131-11-3	Dimethylphthalate	21000.	IU
208-96-8	Acenaphthylene	21000.	IU
606-20-2	2,6-Dinitrotoluene	21000.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-02

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SDIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) 0

Lab File ID: 0914802X1

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 36. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 40.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	100000.	IU
83-32-9	Acenaphthene	21000.	IU
51-28-5	2,4-Dinitrophenol	100000.	IU
100-02-7	4-Nitrophenol	100000.	IU
132-64-9	Dibenzofuran	21000.	IU
121-14-2	2,4-Dinitrotoluene	21000.	IU
84-66-2	Diethylphthalate	21000.	IU
7005-72-3	4-Chlorophenyl-phenylether	21000.	IU
86-73-7	Fluorene	21000.	IU
100-01-6	4-Nitroaniline	100000.	IU
534-52-1	4,6-Dinitro-2-Methylphenol	100000.	IU
86-30-6	N-Nitrosodiphenylamine (1)	21000.	IU
101-55-3	4-Bromophenyl-phenylether	21000.	IU
118-74-1	Hexachlorobenzene	21000.	IU
87-86-5	Pentachlorophenol	100000.	IU
85-01-8	Phenanthrene	4100.	IJ
120-12-7	Anthracene	21000.	IU
84-74-2	Di-n-butylphthalate	21000.	IU
206-44-0	Fluoranthene	21000.	IU
129-00-0	Pyrene	3500.	IJ
85-68-7	Butylbenzylphthalate	21000.	IU
91-94-1	3,3'-Dichlorobenzidine	42000.	IU
56-55-3	Benzo(a)anthracene	21000.	IU
218-01-9	Chrysene	21000.	IU
117-81-7	bis(2-Ethylhexyl)phthalate	12000.	IJB
117-84-0	Di-n-octylphthalate	21000.	IU
205-99-2	Benzo(b)fluoranthene	21000.	IU
207-08-9	Benzo(k)fluoranthene	21000.	IU
50-32-8	Benzo(a)pyrene	21000.	IU
193-39-5	Indeno(1,2,3-cd)pyrene	21000.	IU
53-70-3	Dibenz(a,h)anthracene	21000.	IU
191-24-2	Benzo(g,h,i)perylene	21000.	IU

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-02

Job Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0914802X1

Level: (low/med) LOW

Date Received: 9/21/91

X Moisture: not dec. 36. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 40.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 17

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.25	200000.	J A
2.	UNKNOWN HYDROCARBON	24.32	70000.	J
3.	UNKNOWN HYDROCARBON	26.33	80000.	J
4.	UNKNOWN	26.92	60000.	J
5.	UNKNOWN HYDROCARBON	29.75	70000.	J
6.	UNKNOWN	30.93	80000.	J
7.	UNKNOWN HYDROCARBON	31.40	200000.	J
8.	UNKNOWN HYDROCARBON	34.50	100000.	J
9.	UNKNOWN ACID	35.75	100000.	J
10.	UNKNOWN	38.00	100000.	J
11.	UNKNOWN HYDROCARBON	40.02	200000.	J
12.	UNKNOWN HYDROCARBON	42.83	100000.	J
13.	UNKNOWN	44.58	200000.	J
14.	UNKNOWN	45.92	300000.	J
15.	UNKNOWN	46.32	100000.	J
16.	UNKNOWN	46.67	300000.	J
17.	UNKNOWN	47.70	300000.	J
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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DS-03

Lab Name: ANALYTICA_INCORPORATED Contract: _____

Lab Codes: _____ Case No.: G_MIL SAS No.: _____ SDG No.: 9109148

Matrix (soil/water): WATER Lab Sample ID: ***9109148-3

Level (low/med): _____ Date Received: 09/21/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U	WN	F
7440-39-3	Barium	4770000			P
7440-43-9	Cadmium	200	U		P
7440-47-3	Chromium	250	U		P
7439-92-1	Lead	1930			F
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	20.0	U	WN	F
7440-22-4	Silver	250	U		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
TCLP_METALS. ICP_ANALYSIS_AT_50X_DILUTION.
SELENIUM_ANALYZED_AT_A_10X_ANALYTICAL_DILUTION, LEAD_AT_A_100X.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-03

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 21.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	13.	IU
74-83-9	-----Bromomethane	13.	IU
75-01-4	-----Vinyl Chloride	13.	IU
75-00-3	-----Chloroethane	13.	IU
75-09-2	-----Methylene Chloride	11.	IB
67-64-1	-----Acetone	36.	
75-15-0	-----Carbon Disulfide	1.	J
75-35-4	-----1,1-Dichloroethene	6.	IU
75-34-3	-----1,1-Dichloroethane	6.	IU
540-59-0	-----trans-1,2-Dichloroethene	6.	IU
156-59-2	-----cis-1,2-Dichloroethene	6.	IU
67-66-3	-----Chloroform	6.	IU
107-06-2	-----1,2-Dichloroethane	6.	IU
78-93-3	-----2-Butanone	13.	IU
71-55-6	-----1,1,1-Trichloroethane	6.	IU
56-23-5	-----Carbon Tetrachloride	6.	IU
75-27-4	-----Bromodichloromethane	6.	IU
78-87-5	-----1,2-Dichloropropane	6.	IU
10061-01-5	-----cis-1,3-Dichloropropene	6.	IU
79-01-6	-----Trichloroethene	6.	IU
124-48-1	-----Dibromochloromethane	6.	IU
79-00-5	-----1,1,2-Trichloroethane	6.	IU
71-43-2	-----Benzene	6.	IU
10061-02-6	-----trans-1,3-Dichloropropene	6.	IU
75-25-2	-----Bromoform	6.	IU
108-10-1	-----4-Methyl-2-Pentanone	13.	IU
591-78-6	-----2-Hexanone	13.	IU
127-18-4	-----Tetrachloroethene	6.	IU
79-34-5	-----1,1,2,2-Tetrachloroethane	6.	IU
108-88-3	-----Toluene	6.	IU
108-90-7	-----Chlorobenzene	6.	IU
100-41-4	-----Ethylbenzene	6.	IU
100-42-5	-----Styrene	6.	IU
1330-20-7	-----m+p-Xylenes	6.	IU
95-47-6	-----o-Xylene	6.	IU

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-03

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 21.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.				
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-03

Contract:

| | | | |

ab Name: AI

Lab Code: AI

Case No.:

SAS No.:

SDG No. : 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) 0

Lab File ID: 091480311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 21. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor:

1.00

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG 0

108-95-2	Phenol	420.	IU
111-44-4	bis(2-Chloroethyl)ether	420.	IU
95-57-8	2-Chlorophenol	420.	IU
541-73-1	1,3-Dichlorobenzene	420.	IU
106-46-7	1,4-Dichlorobenzene	420.	IU
100-51-6	Benzyl Alcohol	420.	IU
95-50-1	1,2-Dichlorobenzene	420.	IU
95-48-7	2-Methylphenol	420.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	420.	IU
106-44-5	4-Methylphenol	420.	IU
621-64-7	N-Nitroso-di-n-propylamine	420.	IU
67-72-1	Hexachloroethane	420.	IU
98-95-3	Nitrobenzene	420.	IU
78-59-1	Isophorone	420.	IU
88-73-5	2-Nitrophenol	420.	IU
105-67-9	2,4-Dimethylphenol	420.	IU
65-85-0	Benzoic Acid	2100.	IU
111-91-1	bis(2-Chloroethoxy)Methane	420.	IU
120-83-2	2,4-Dichlorophenol	420.	IU
120-82-1	1,2,4-Trichlorobenzene	420.	IU
91-20-3	Naphthalene	420.	IU
106-47-8	4-Chloroaniline	420.	IU
87-68-3	Hexachlorobutadiene	420.	IU
59-50-7	4-Chloro-3-Methylphenol	420.	IU
91-57-6	2-Methylnaphthalene	420.	IU
77-47-4	Hexachlorocyclopentadiene	420.	IU
88-06-2	2,4,6-Trichlorophenol	420.	IU
95-95-4	2,4,5-Trichlorophenol	2100.	IU
91-58-7	2-Chloronaphthalene	420.	IU
88-74-4	2-Nitroaniline	2100.	IU
131-11-3	Dimethylphthalate	420.	IU
208-96-8	Acenaphthylene	420.	IU
606-20-2	2,6-Dinitrotoluene	420.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-03

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 091480311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 21. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2100.	U
83-32-9	Acenaphthene	420.	U
51-28-5	2,4-Dinitrophenol	2100.	U
100-02-7	4-Nitrophenol	2100.	U
132-64-9	Dibenzofuran	420.	U
121-14-2	2,4-Dinitrotoluene	420.	U
84-66-2	Diethylphthalate	420.	U
7005-72-3	4-Chlorophenyl-phenylether	420.	U
86-73-7	Fluorene	420.	U
100-01-6	4-Nitroaniline	2100.	U
534-52-1	4,6-Dinitro-2-Methylphenol	2100.	U
86-30-6	N-Nitrosodiphenylamine (1)	420.	U
101-55-3	4-Bromophenyl-phenylether	420.	U
118-74-1	Hexachlorobenzene	420.	U
87-86-5	Pentachlorophenol	2100.	U
85-01-8	Phenanthrene	420.	U
120-12-7	Anthracene	420.	U
84-74-2	Di-n-butylphthalate	420.	U
206-44-0	Fluoranthene	44.	J
129-00-0	Pyrene	420.	U
85-68-7	Butylbenzylphthalate	67.	J
91-94-1	3,3'-Dichlorobenzidine	840.	U
56-55-3	Benzo(a)anthracene	420.	U
218-01-9	Chrysene	420.	U
117-81-7	bis(2-Ethylhexyl)phthalate	190.	BU
117-84-0	Di-n-octylphthalate	420.	U
205-99-2	Benzo(b)fluoranthene	420.	U
207-08-9	Benzo(k)fluoranthene	420.	U
50-32-8	Benzo(a)pyrene	420.	U
193-39-5	Indeno(1,2,3-cd)pyrene	420.	U
53-70-3	Dibenz(a,h)anthracene	420.	U
191-24-2	Benzo(g,h,i)perylene	420.	U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-03

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 091480311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 21. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.82	400.	J A
2.	UNKNOWN	4.03	3000.	J A
3.	UNKNOWN	4.58	100000.	J A
4.	UNKNOWN	5.18	200.	J A
5.	UNKNOWN	5.87	2000.	J A
6.	UNKNOWN	7.53	500.	J
7.	UNKNOWN	7.60	300.	J
8.	UNKNOWN	8.13	200.	J
9.	UNKNOWN HYDROCARBON	23.72	500.	J
10.	UNKNOWN HYDROCARBON	24.13	600.	J
11.	112-18-5 1-Dodecanamine, N,N-dimethyl	24.38	300.	J
12.	UNKNOWN	33.05	200.	J
13.	UNKNOWN	35.70	300.	J
14.	UNKNOWN HYDROCARBON	35.92	200.	J
15.	UNKNOWN HYDROCARBON	37.30	400.	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

DS-04

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480412

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 25.

Date Analyzed: 9/26/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	-----Chloromethane	13.	IU
74-83-9	-----Bromomethane	13.	IU
75-01-4	-----Vinyl Chloride	13.	IU
75-00-3	-----Chloroethane	13.	IU
75-09-2	-----Methylene Chloride	7.	IB
67-64-1	-----Acetone	10.	IBJ
75-15-0	-----Carbon Disulfide	7.	IU
75-35-4	-----1,1-Dichloroethene	7.	IU
75-34-3	-----1,1-Dichloroethane	7.	IU
540-59-0	-----trans-1,2-Dichloroethene	7.	IU
156-59-2	-----cis-1,2-Dichloroethene	7.	IU
67-66-3	-----Chloroform	7.	IU
107-06-2	-----1,2-Dichloroethane	7.	IU
78-93-3	-----2-Butanone	13.	IU
71-55-6	-----1,1,1-Trichloroethane	7.	IU
56-23-5	-----Carbon Tetrachloride	7.	IU
75-27-4	-----Bromodichloromethane	7.	IU
78-87-5	-----1,2-Dichloropropane	7.	IU
10061-01-5	-----cis-1,3-Dichloropropene	7.	IU
79-01-6	-----Trichloroethene	7.	IU
124-48-1	-----Dibromochloromethane	7.	IU
79-00-5	-----1,1,2-Trichloroethane	7.	IU
71-43-2	-----Benzene	7.	IU
10061-02-6	-----trans-1,3-Dichloropropene	7.	IU
75-25-2	-----Bromoform	7.	IU
108-10-1	-----4-Methyl-2-Pentanone	13.	IU
591-78-6	-----2-Hexanone	13.	IU
127-18-4	-----Tetrachloroethene	7.	IU
79-34-5	-----1,1,2,2-Tetrachloroethane	7.	IU
108-88-3	-----Toluene	7.	IU
108-90-7	-----Chlorobenzene	7.	IU
100-41-4	-----Ethylbenzene	7.	IU
100-42-5	-----Styrene	7.	IU
1330-20-7	-----m+p-Xylenes	7.	IU
95-47-6	-----o-Xylene	7.	IU

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-04

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480412

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 25.

Date Analyzed: 9/26/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.				
2.				
3.				
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Contract:

DS-04

Lab Name: AI

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) 0

Lab File ID: 091480411

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 25. dec. 0.

Date Extracted: 9/23/91

Extraction: (Sepf/Cont/Sonc) SDC

Date Analyzed: 9/28/91

OPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor:

1.00

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG 0

108-93-2	Phenol	450.	IU
111-44-4	bis(2-Chloroethyl)ether	450.	IU
95-57-8	2-Chlorophenol	450.	IU
541-73-1	1,3-Dichlorobenzene	450.	IU
106-46-7	1,4-Dichlorobenzene	450.	IU
100-51-6	Benzyl Alcohol	450.	IU
95-50-1	1,2-Dichlorobenzene	450.	IU
95-48-7	2-Methylphenol	450.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	450.	IU
106-44-5	4-Methylphenol	450.	IU
621-64-7	N-Nitroso-di-n-propylamine	450.	IU
67-72-1	Hexachloroethane	450.	IU
98-95-3	Nitrobenzene	450.	IU
78-59-1	Isophorone	450.	IU
88-75-5	2-Nitrophenol	450.	IU
105-67-9	2,4-Dimethylphenol	450.	IU
65-85-0	Benzoic Acid	450.	IU
111-91-1	bis(2-Chloroethoxy)Methane	2200.	IU
120-83-2	2,4-Dichlorophenol	450.	IU
120-82-1	1,2,4-Trichlorobenzene	450.	IU
91-20-3	Naphthalene	450.	IU
106-47-8	4-Chloroaniline	450.	IU
87-68-3	Hexachlorobutadiene	450.	IU
59-50-7	4-Chloro-3-Methylphenol	450.	IU
91-57-6	2-Methylnaphthalene	450.	IU
77-47-4	Hexachlorocyclopentadiene	450.	IU
88-06-2	2,4,6-Trichlorophenol	450.	IU
95-95-4	2,4,5-Trichlorophenol	2200.	IU
91-58-7	2-Chloronaphthalene	450.	IU
88-74-4	2-Nitroaniline	450.	IU
131-11-3	Dimethylphthalate	2200.	IU
208-96-8	Acenaphthylene	450.	IU
606-20-2	2,6-Dinitrotoluene	450.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-04

Lab Name: AI Contract: SDG No.: 09148

Lab Code: AI Case No.: SAS No.: Lab Sample ID:

Matrix: (soil/water) SOIL Lab File ID: 091480411

Sample wt/vol: 30.1 (g/mL) G Date Received: 9/21/91

Level: (low/med) LOW Date Extracted: 9/23/91

% Moisture: not dec. 25. dec. 0. Date Analyzed: 9/28/91

Extraction: (SepF/Cont/Sonc) SONC Dilution Factor: 1.00

GC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2200.	1U
83-32-9	Acenaphthene	450.	1U
51-28-5	2,4-Dinitrophenol	2200.	1U
100-02-7	4-Nitrophenol	2200.	1U
132-64-9	Dibenzofuran	450.	1U
121-14-2	2,4-Dinitrotoluene	450.	1U
84-66-2	Diethylphthalate	450.	1U
7005-72-3	4-Chlorophenyl-phenylether	450.	1U
86-73-7	Fluorene	450.	1U
100-01-6	4-Nitroaniline	2200.	1U
534-52-1	4,6-Dinitro-2-Methylphenol	2200.	1U
86-30-6	N-Nitrosodiphenylamine (1)	450.	1U
101-55-3	4-Bromophenyl-phenylether	450.	1U
118-74-1	Hexachlorobenzene	450.	1U
87-86-5	Pentachlorophenol	2200.	1U
85-01-8	Phenanthrene	450.	1U
120-12-7	Anthracene	450.	1U
84-74-2	Di-n-butylphthalate	450.	1U
206-44-0	Fluoranthene	450.	1U
129-00-0	Pyrene	450.	1U
85-68-7	Butylbenzylphthalate	450.	1U
91-94-1	3,3'-Dichlorobenzidine	890.	1U
56-55-3	Benzo(a)anthracene	450.	1U
218-01-9	Chrysene	450.	1U
117-81-7	bis(2-Ethylhexyl)phthalate	50.	1BU
117-84-0	Di-n-octylphthalate	450.	1U
205-99-2	Benzo(b)fluoranthene	450.	1U
207-08-9	Benzo(k)fluoranthene	450.	1U
50-32-8	Benzo(a)pyrene	450.	1U
193-39-5	Indeno(1,2,3-cd)pyrene	450.	1U
53-70-3	Dibenz(a,h)anthracene	450.	1U
191-24-2	Benzo(g,h,i)perylene	450.	1U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-04

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) 0

Lab File ID: 091480411

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 25. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.00

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RJ	EST. CONC.	G
1.	UNKNOWN	2.92	300.	J A
2.	UNKNOWN	3.43	200.	J A
3.	UNKNOWN	3.82	1000.	J A
4.	UNKNOWN	4.05	100000.	J A
5.	UNKNOWN	4.58	10000.	J A
6.	UNKNOWN	5.87	3000.	J A
7.	UNKNOWN	7.53	500.	J
8.	UNKNOWN	7.60	400.	J
9.	UNKNOWN	33.03	200.	J
10.	UNKNOWN ACID	35.70	400.	J
11.	UNKNOWN	35.90	400.	J
12.	UNKNOWN	37.30	300.	J
13.	UNKNOWN HYDROCARBON	38.63	300.	J
14.	UNKNOWN	39.95	200.	J
15.	UNKNOWN HYDROCARBON	41.25	200.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. :

DS-05

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No. : 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480511

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 25.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	13.	U
74-83-9	-----Bromomethane	13.	U
75-01-4	-----Vinyl Chloride	13.	U
75-00-3	-----Chloroethane	13.	U
75-09-2	-----Methylene Chloride	7.	B
67-64-1	-----Acetone	18.	
75-15-0	-----Carbon Disulfide	7.	U
75-35-4	-----1,1-Dichloroethene	7.	U
75-34-3	-----1,1-Dichloroethane	7.	U
540-59-0	-----trans-1,2-Dichloroethene	7.	U
156-59-2	-----cis-1,2-Dichloroethene	7.	U
67-66-3	-----Chloroform	7.	U
107-06-2	-----1,2-Dichloroethane	7.	U
78-93-3	-----2-Butanone	4.	J
71-55-6	-----1,1,1-Trichloroethane	7.	U
56-23-5	-----Carbon Tetrachloride	7.	U
75-27-4	-----Bromodichloromethane	7.	U
78-87-5	-----1,2-Dichloropropane	7.	U
10061-01-5	-----cis-1,3-Dichloropropene	7.	U
79-01-6	-----Trichloroethene	7.	U
124-48-1	-----Dibromochloromethane	7.	U
79-00-5	-----1,1,2-Trichloroethane	7.	U
71-43-2	-----Benzene	7.	U
10061-02-6	-----trans-1,3-Dichloropropene	7.	U
75-25-2	-----Bromoform	7.	U
108-10-1	-----4-Methyl-2-Pentanone	13.	U
591-78-6	-----2-Hexanone	13.	U
127-18-4	-----Tetrachloroethene	7.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	7.	U
108-88-3	-----Toluene	7.	U
108-90-7	-----Chlorobenzene	7.	U
100-41-4	-----Ethylbenzene	7.	U
100-42-5	-----Styrene	7.	U
1330-20-7	-----m+p-Xylenes	7.	U
95-47-6	-----o-Xylene	7.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-05

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480511

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 25.

Date Analyzed: 9/25/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.				
2.				
3.				
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-05

Job Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDC No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) 0

Lab File ID: 091480511

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 25. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

RPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor:

1.00

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG g

108-95-2	Phenol	440.	IU
111-44-4	bis(2-Chloroethyl)ether	440.	IU
95-57-8	2-Chlorophenol	440.	IU
541-73-1	1,3-Dichlorobenzene	440.	IU
106-46-7	1,4-Dichlorobenzene	440.	IU
100-51-6	Benzyl Alcohol	440.	IU
95-50-1	1,2-Dichlorobenzene	440.	IU
95-48-7	2-Methylphenol	440.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	440.	IU
106-44-5	4-Methylphenol	440.	IU
621-64-7	N-Nitroso-di-n-propylamine	440.	IU
67-72-1	Hexachloroethane	440.	IU
98-95-3	Nitrobenzene	440.	IU
78-59-1	Isonorone	440.	IU
88-75-5	2-Nitrophenol	440.	IU
105-67-9	2,4-Dimethylphenol	440.	IU
65-85-0	Benzoic Acid	2200.	IU
111-91-1	bis(2-Chloroethoxy)Methane	440.	IU
120-83-2	2,4-Dichlorophenol	440.	IU
120-82-1	1,2,4-Trichlorobenzene	440.	IU
91-20-3	Naphthalene	440.	IU
106-47-8	4-Chloroaniline	440.	IU
87-68-3	Hexachlorobutadiene	440.	IU
59-50-7	4-Chloro-3-Methylphenol	440.	IU
91-57-6	2-Methylnaphthalene	440.	IU
77-47-4	Hexachlorocyclopentadiene	440.	IU
88-06-2	2,4,6-Trichlorophenol	440.	IU
95-95-4	2,4,5-Trichlorophenol	2200.	IU
91-58-7	2-Chloronaphthalene	440.	IU
88-74-4	2-Nitroaniline	2200.	IU
131-11-3	Dimethylphthalate	440.	IU
208-96-8	Acenaphthylene	440.	IU
606-20-2	2,6-Dinitrotoluene	440.	IU

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-05

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: 091480511

Level: (low/med) LDW

Date Received: 9/21/91

% Moisture: not dec. 25. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

APC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN	3.47	4000.	J AI
2.	UNKNOWN	3.78	1000.	J AI
3.	UNKNOWN	3.92	1000.	J AI
4.	UNKNOWN	4.53	90000.	J AI
5.	UNKNOWN	27.80	900.	J
6.	UNKNOWN HYDROCARBON	28.00	500.	J
7.	UNKNOWN	28.20	800.	J
8.	UNKNOWN	39.38	500.	J
9.	UNKNOWN	39.60	2000.	J
10.	UNKNOWN HYDROCARBON	40.00	400.	J
11.	UNKNOWN HYDROCARBON	41.32	400.	J
12.	UNKNOWN	41.43	1000.	J
13.	UNKNOWN	43.00	2000.	J
14.	UNKNOWN	43.30	1000.	J
15.	UNKNOWN	43.47	500.	J
16.	UNKNOWN	45.68	3000.	J
17.	UNKNOWN	45.95	900.	J
18.	UNKNOWN	46.73	3000.	J
19.	UNKNOWN	47.17	400.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-06

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914806L3

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 31.

Date Analyzed: 9/27/91

Column: (pack/cap) CAP

Dilution Factor: 50/10.00 *P.6*

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	720.	U
74-83-9	-----Bromomethane	720.	U
75-01-4	-----Vinyl Chloride	720.	U
75-00-3	-----Chloroethane	720.	U
75-09-2	-----Methylene Chloride	300.	BJ
67-64-1	-----Acetone	730.	B
75-15-0	-----Carbon Disulfide	250.	J
75-35-4	-----1,1-Dichloroethene	360.	U
75-34-3	-----1,1-Dichloroethane	360.	U
540-59-0	-----trans-1,2-Dichloroethene	360.	U
156-59-2	-----cis-1,2-Dichloroethene	360.	U
67-66-3	-----Chloroform	360.	U
107-06-2	-----1,2-Dichloroethane	360.	U
78-93-3	-----2-Butanone	720.	U
71-55-6	-----1,1,1-Trichloroethane	360.	U
56-23-5	-----Carbon Tetrachloride	360.	U
75-27-4	-----Bromodichloromethane	360.	U
78-87-5	-----1,2-Dichloropropane	360.	U
10061-01-5	-----cis-1,3-Dichloropropene	360.	U
79-01-6	-----Trichloroethene	360.	U
124-48-1	-----Dibromochloromethane	360.	U
79-00-5	-----1,1,2-Trichloroethane	360.	U
71-43-2	-----Benzene	360.	U
10061-02-6	-----trans-1,3-Dichloropropene	360.	U
75-25-2	-----Bromoform	360.	U
108-10-1	-----4-Methyl-2-Pentanone	720.	U
591-78-6	-----2-Hexanone	720.	U
127-18-4	-----Tetrachloroethene	110.	J
79-34-5	-----1,1,2,2-Tetrachloroethane	360.	U
108-88-3	-----Toluene	99.	J
108-90-7	-----Chlorobenzene	360.	U
100-41-4	-----Ethylbenzene	360.	U
100-42-5	-----Styrene	360.	U
1330-20-7	-----m+p-Xylenes	360.	U
95-47-6	-----o-Xylene	360.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-06

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914806L3

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 31.

Date Analyzed: 9/27/91

Column: (pack/cap) CAP

Dilution Factor: ~~50~~ 10.00
P.C.

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN	15.03	500.	J
2.	UNKNOWN	18.15	400.	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-06

Lab Name: AI Contract: SDG No.: 09148

Lab Code: AI Case No.: SAS No.: Lab Sample ID:

Matrix: (soil/water) SOIL Lab File ID: 0914806X1

Sample wt/vol: 1.0 (g/mL) 0 Date Received: 9/21/91

Level: (low/med) MED Date Extracted: 9/23/91

% Moisture: not dec. 31. dec. 0. Date Analyzed: 9/25/91

Extraction: (SepF/Cont/Sonc) SONC Dilution Factor: ~~20.00~~ 10.30

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
108-95-2	Phenol	290000.	IU
111-44-4	bis(2-Chloroethyl)ether	290000.	IU
95-57-8	2-Chlorophenol	290000.	IU
541-73-1	1,3-Dichlorobenzene	290000.	IU
106-46-7	1,4-Dichlorobenzene	290000.	IU
100-51-6	Benzyl Alcohol	290000.	IU
95-50-1	1,2-Dichlorobenzene	290000.	IU
95-48-7	2-Methylphenol	290000.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	290000.	IU
106-44-5	4-Methylphenol	290000.	IU
621-64-7	N-Nitroso-di-n-propylamine	290000.	IU
67-72-1	Hexachloroethane	290000.	IU
98-95-3	Nitrobenzene	290000.	IU
78-59-1	Isophorone	290000.	IU
88-75-5	2-Nitrophenol	290000.	IU
105-67-9	2,4-Dimethylphenol	290000.	IU
65-85-0	Benzoic Acid	1400000.	IU
111-91-1	bis(2-Chloroethoxy)Methane	290000.	IU
120-83-2	2,4-Dichlorophenol	290000.	IU
120-82-1	1,2,4-Trichlorobenzene	290000.	IU
91-20-3	Naphthalene	290000.	IU
106-47-8	4-Chloroaniline	290000.	IU
87-68-3	Hexachlorobutadiene	290000.	IU
59-50-7	4-Chloro-3-Methylphenol	290000.	IU
91-57-6	2-Methylnaphthalene	290000.	IU
77-47-4	Hexachlorocyclopentadiene	290000.	IU
88-06-2	2,4,6-Trichlorophenol	290000.	IU
95-95-4	2,4,5-Trichlorophenol	1400000.	IU
91-58-7	2-Chloronaphthalene	290000.	IU
88-74-4	2-Nitroaniline	1400000.	IU
131-11-3	Dimethylphthalate	290000.	IU
208-96-8	Acenaphthylene	290000.	IU
606-20-2	2,6-Dinitrotoluene	290000.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-06

Lab Name: AI Contract: SDG No.: 09148
 Lab Code: AI Case No.: SAS No.: Lab Sample ID:
 Matrix: (soil/water) SOIL Lab File ID: 0914806X1
 Sample wt/vol: 1.0 (g/mL) G Date Received: 9/21/91
 Level: (low/med) MED Date Extracted: 9/23/91
 % Moisture: not dec. 31. dec. 0. Date Analyzed: 9/25/91
 Extraction: (SepF/Cont/Sonc) SONC Dilution Factor: ~~20.00~~ 10.33 ^{ml}
 GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
99-09-2	3-Nitroaniline	1400000.	1U
83-32-9	Acenaphthene	290000.	1U
51-28-5	2,4-Dinitrophenol	1400000.	1U
100-02-7	4-Nitrophenol	1400000.	1U
132-64-9	Dibenzofuran	290000.	1U
121-14-2	2,4-Dinitrotoluene	290000.	1U
84-66-2	Diethylphthalate	290000.	1U
7005-72-3	4-Chlorophenyl-phenylether	290000.	1U
86-73-7	Fluorene	290000.	1U
100-01-6	4-Nitroaniline	1400000.	1U
534-52-1	4,6-Dinitro-2-Methylphenol	1400000.	1U
86-30-6	N-Nitrosodiphenylamine (1)	290000.	1U
101-55-3	4-Bromophenyl-phenylether	290000.	1U
118-74-1	Hexachlorobenzene	290000.	1U
87-86-5	Pentachlorophenol	1400000.	1U
85-01-8	Phenanthrene	290000.	1U
120-12-7	Anthracene	290000.	1U
84-74-2	Di-n-butylphthalate	290000.	1U
206-44-0	Fluoranthene	290000.	1U
129-00-0	Pyrene	290000.	1U
85-68-7	Butylbenzylphthalate	290000.	1U
91-94-1	3,3'-Dichlorobenzidine	570000.	1U
56-55-3	Benzo(a)anthracene	290000.	1U
218-01-9	Chrysene	290000.	1U
117-81-7	bis(2-Ethylhexyl)phthalate	290000.	1U
117-84-0	Di-n-octylphthalate	290000.	1U
205-99-2	Benzo(b)fluoranthene	290000.	1U
207-08-9	Benzo(k)fluoranthene	290000.	1U
50-32-8	Benzo(a)pyrene	290000.	1U
193-39-5	Indeno(1,2,3-cd)pyrene	290000.	1U
53-70-3	Dibenz(a,h)anthracene	290000.	1U
191-24-2	Benzo(g,h,i)perylene	290000.	1U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-06

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDQ No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914806X1

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 31. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/25/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: ~~20.00~~^{PH}
10.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 19

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ACID	29.05	20000000.	J
2.	UNKNOWN ACID	29.95	20000000.	J
3.	UNKNOWN	30.50	2000000.	J
4.	UNKNOWN	30.68	2000000.	J
5.	UNKNOWN	31.90	200000000.	J
6.	UNKNOWN ACID	33.86	30000000.	J
7.	UNKNOWN ACID	33.85	20000000.	J
8.	UNKNOWN ACID	34.03	50000000.	J
9.	UNKNOWN	34.08	3000000.	J
10.	UNKNOWN	34.33	3000000.	J
11.	UNKNOWN	34.43	600000.	J
12.	UNKNOWN ACID	34.63	700000.	J
13.	UNKNOWN ACID	35.92	800000.	J
14.	UNKNOWN	37.17	800000.	J
15.	UNKNOWN	42.85	600000.	J
16.	UNKNOWN HYDROCARBON	46.23	700000.	J
17.	UNKNOWN	46.50	500000.	J
18.	UNKNOWN	46.88	700000.	J
19.	UNKNOWN HYDROCARBON	47.23	500000.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-07

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914607L3

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 1.

Date Analyzed: 9/27/91

Column: (pack/cap) CAP

Dilution Factor: 50 X 10.00

P.C.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	500.	U
74-83-9	-----Bromomethane	500.	U
75-01-4	-----Vinyl Chloride	500.	U
75-00-3	-----Chloroethane	500.	U
75-09-2	-----Methylene Chloride	460.	B
67-64-1	-----Acetone	1600.	B
75-15-0	-----Carbon Disulfide	250.	U
75-35-4	-----1,1-Dichloroethene	250.	U
75-34-3	-----1,1-Dichloroethane	250.	U
540-59-0	-----trans-1,2-Dichloroethene	250.	U
156-59-2	-----cis-1,2-Dichloroethene	250.	U
67-66-3	-----Chloroform	250.	U
107-06-2	-----1,2-Dichloroethane	250.	U
78-93-3	-----2-Butanone	110.	J
71-55-6	-----1,1,1-Trichloroethane	250.	U
56-23-5	-----Carbon Tetrachloride	250.	U
75-27-4	-----Bromodichloromethane	250.	U
78-87-5	-----1,2-Dichloropropane	250.	U
10061-01-5	-----cis-1,3-Dichloropropane	250.	U
79-01-6	-----Trichloroethene	250.	U
124-48-1	-----Dibromochloromethane	250.	U
79-00-5	-----1,1,2-Trichloroethane	250.	U
71-43-2	-----Benzene	250.	U
10061-02-6	-----trans-1,3-Dichloropropane	250.	U
75-25-2	-----Bromoform	250.	U
108-10-1	-----4-Methyl-2-Pentanone	500.	U
591-78-6	-----2-Hexanone	500.	U
127-18-4	-----Tetrachloroethene	250.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	250.	U
108-88-3	-----Toluene	110.	J
108-90-7	-----Chlorobenzene	250.	U
100-41-4	-----Ethylbenzene	250.	U
100-42-5	-----Styrene	250.	U
1330-20-7	-----m+p-Xylenes	250.	U
95-47-6	-----o-Xylene	250.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-07

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914807L3

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 1.

Date Analyzed: 9/27/91

Column: (pack/cap) CAP

Dilution Factor: 50.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

P.C.

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	g
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-07

Lab Name: AI Contract:
 Lab Code: AI Case No.: SAS No.: SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID:
 Sample wt/vol: 1.0 (g/mL) G Lab File ID: 0914807X1
 Level: (low/med) MED Date Received: 9/21/91
 % Moisture: not dec. 1. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/25/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~20.00~~
10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
108-95-2	Phenol	200000.	1U
111-44-4	bis(2-Chloroethyl)ether	200000.	1U
95-57-8	2-Chlorophenol	200000.	1U
541-73-1	1,3-Dichlorobenzene	200000.	1U
106-46-7	1,4-Dichlorobenzene	200000.	1U
100-51-6	Benzyl Alcohol	200000.	1U
95-50-1	1,2-Dichlorobenzene	200000.	1U
95-48-7	2-Methylphenol	200000.	1U
108-60-1	bis(2-Chloroisopropyl)Ether	200000.	1U
106-44-5	4-Methylphenol	200000.	1U
621-64-7	N-Nitroso-di-n-propylamine	200000.	1U
67-72-1	Hexachloroethane	200000.	1U
98-95-3	Nitrobenzene	200000.	1U
78-59-1	Isophorone	200000.	1U
88-75-5	2-Nitrophenol	200000.	1U
105-67-9	2,4-Dimethylphenol	200000.	1U
65-85-0	Benzoic Acid	990000.	1U
111-91-1	bis(2-Chloroethoxy)Methane	200000.	1U
120-83-2	2,4-Dichlorophenol	200000.	1U
120-82-1	1,2,4-Trichlorobenzene	200000.	1U
91-20-3	Naphthalene	200000.	1U
106-47-8	4-Chloroaniline	200000.	1U
87-68-3	Hexachlorobutadiene	200000.	1U
59-50-7	4-Chloro-3-Methylphenol	200000.	1U
91-57-6	2-Methylnaphthalene	200000.	1U
77-47-4	Hexachlorocyclopentadiene	200000.	1U
88-06-2	2,4,6-Trichlorophenol	200000.	1U
95-95-4	2,4,5-Trichlorophenol	990000.	1U
91-58-7	2-Chloronaphthalene	200000.	1U
88-74-4	2-Nitroaniline	990000.	1U
131-11-3	Dimethylphthalate	200000.	1U
208-96-8	Acenaphthylene	200000.	1U
606-20-2	2,6-Dinitrotoluene	200000.	1U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-07

Lab Name: AI Contract:
 Lab Code: AI Case No.: SAS No.: SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID:
 Sample wt/vol: 1.0 (g/mL) G Lab File ID: 0914807X1
 Level: (low/med) MED Date Received: 9/21/91
 % Moisture: not dec. 1. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/25/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~20.00~~ ^{10.00} _{µM}

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	990000.	1U
83-32-9	Acenaphthene	200000.	1U
51-28-5	2,4-Dinitrophenol	990000.	1U
100-02-7	4-Nitrophenol	990000.	1U
132-64-9	Dibenzofuran	200000.	1U
121-14-2	2,4-Dinitrotoluene	200000.	1U
84-66-2	Diethylphthalate	200000.	1U
7005-72-3	4-Chlorophenyl-phenylether	200000.	1U
86-73-7	Fluorene	200000.	1U
100-01-6	4-Nitroaniline	990000.	1U
534-52-1	4,6-Dinitro-2-Methylphenol	990000.	1U
86-30-6	N-Nitrosodiphenylamine (1)	200000.	1U
101-55-3	4-Bromophenyl-phenylether	200000.	1U
118-74-1	Hexachlorobenzene	200000.	1U
87-86-5	Pentachlorophenol	990000.	1U
85-01-8	Phenanthrene	200000.	1U
120-12-7	Anthracene	200000.	1U
84-74-2	Di-n-butylphthalate	200000.	1U
206-44-0	Fluoranthene	200000.	1U
129-00-0	Pyrene	200000.	1U
85-68-7	Butylbenzylphthalate	200000.	1U
91-94-1	3,3'-Dichlorobenzidine	390000.	1U
56-55-3	Benzo(a)anthracene	200000.	1U
218-01-9	Chrysene	200000.	1U
117-81-7	bis(2-Ethylhexyl)phthalate	200000.	1U
117-84-0	Di-n-octylphthalate	200000.	1U
205-99-2	Benzo(b)fluoranthene	200000.	1U
207-08-9	Benzo(k)fluoranthene	200000.	1U
50-32-8	Benzo(a)pyrene	200000.	1U
193-39-5	Indeno(1,2,3-cd)pyrene	200000.	1U
53-70-3	Dibenz(a,h)anthracene	200000.	1U
191-24-2	Benzo(g,h,i)perylene	200000.	1U

(1) - Cannot be separated from diphenylamine

IF
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-07

Lab Name: AI Contract: _____

Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 09148

Matrix: (soil/water) SOIL Lab Sample ID: _____

Sample wt/vol: 1.0 (g/mL) G Lab File ID: 0914807X1

Level: (low/med) MED Date Received: 9/21/91

X Moisture: not dec. 1. dec. 0. Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/25/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~20.00~~^{10.00}

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 17

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN ACID	29.28	500000.	J
2.	24035-50-5 1-Phenanthrenecarboxaldehyde	30.15	200000.	J
3.	UNKNOWN HYDROCARBON	32.67	500000.	J
4.	UNKNOWN	35.40	90000.	J
5.	UNKNOWN	37.48	900000.	J
6.	UNKNOWN	38.32	200000.	J
7.	UNKNOWN	38.73	100000.	J
8.	UNKNOWN	44.63	200000.	J
9.	UNKNOWN	45.12	900000.	J
10.	UNKNOWN	45.38	700000.	J
11.	UNKNOWN	45.62	1000000.	J
12.	UNKNOWN	45.82	500000.	J
13.	UNKNOWN	46.17	5000000.	J
14.	UNKNOWN AROMATIC	46.52	1000000.	J
15.	UNKNOWN	46.93	600000.	J
16.	UNKNOWN	47.05	2000000.	J
17.	UNKNOWN HYDROCARBON	47.47	1000000.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-08

Lab Name: AI

Contract:

Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914808L2

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 18.

Date Analyzed: 9/27/91

Column: (pack/cap) CAP

Dilution Factor: 50.00

P.G.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	610.	U
74-83-9	-----Bromomethane	610.	U
75-01-4	-----Vinyl Chloride	610.	U
75-00-3	-----Chloroethane	610.	U
75-09-2	-----Methylene Chloride	320.	B
67-64-1	-----Acetone	660.	B
75-15-0	-----Carbon Disulfide	300.	U
75-35-4	-----1,1-Dichloroethene	300.	U
75-34-3	-----1,1-Dichloroethane	300.	U
540-59-0	-----trans-1,2-Dichloroethene	300.	U
156-59-2	-----cis-1,2-Dichloroethene	300.	U
67-66-3	-----Chloroform	300.	U
107-06-2	-----1,2-Dichloroethane	300.	U
78-93-3	-----2-Butanone	610.	U
71-55-6	-----1,1,1-Trichloroethane	300.	U
56-23-5	-----Carbon Tetrachloride	300.	U
75-27-4	-----Bromodichloromethane	300.	U
78-87-5	-----1,2-Dichloropropane	300.	U
10061-01-5	-----cis-1,3-Dichloropropene	300.	U
79-01-6	-----Trichloroethene	300.	U
124-48-1	-----Dibromochloromethane	300.	U
79-00-5	-----1,1,2-Trichloroethane	300.	U
71-43-2	-----Benzene	300.	U
10061-02-6	-----trans-1,3-Dichloropropene	300.	U
75-25-2	-----Bromoform	300.	U
108-10-1	-----4-Methyl-2-Pentanone	610.	U
591-78-6	-----2-Hexanone	610.	U
127-18-4	-----Tetrachloroethene	300.	J
79-34-5	-----1,1,2,2-Tetrachloroethane	300.	U
108-88-3	-----Toluene	86.	J
108-90-7	-----Chlorobenzene	300.	U
100-41-4	-----Ethylbenzene	300.	U
100-42-5	-----Styrene	300.	U
1330-20-7	-----m+p-Xylenes	300.	U
95-47-6	-----o-Xylene	300.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
352 2 2 2 2 2
DS-08

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914808L2

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 18.

Date Analyzed: 9/27/91

Column: (pack/cap) CAP

Dilution Factor: 50 X 10.00

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

P.C.

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN HYDROCARBON	18.85	600.	J
2.	UNKNOWN HYDROCARBON	19.53	700.	J
3.	UNKNOWN AROMATIC	20.27	600.	J
4.	UNKNOWN HYDROCARBON	20.73	800.	J
5.	UNKNOWN HYDROCARBON	21.47	1000.	J
6.	UNKNOWN HYDROCARBON	21.90	700.	J
7.	UNKNOWN	22.22	1000.	J
8.	UNKNOWN	22.48	800.	J
9.	UNKNOWN HYDROCARBON	22.70	4000.	J
10.	UNKNOWN HYDROCARBON	22.80	700.	J
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-08

Lab Name: AI Contract:
 Lab Code: AI Case No.: SAS No.: SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID:
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: 091480811
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 18. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/28/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
108-95-2	Phenol	410.	IU
111-44-4	bis(2-Chloroethyl)ether	410.	IU
95-57-8	2-Chlorophenol	410.	IU
541-73-1	1,3-Dichlorobenzene	410.	IU
106-46-7	1,4-Dichlorobenzene	410.	IU
100-51-6	Benzyl Alcohol	410.	IU
95-50-1	1,2-Dichlorobenzene	410.	IU
95-48-7	2-Methylphenol	410.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	410.	IU
106-44-5	4-Methylphenol	410.	IU
621-64-7	N-Nitroso-di-n-propylamine	410.	IU
67-72-1	Hexachloroethane	410.	IU
98-95-3	Nitrobenzene	410.	IU
78-59-1	Isophorone	410.	IU
88-75-5	2-Nitrophenol	410.	IU
105-67-9	2,4-Dimethylphenol	410.	IU
65-85-0	Benzoic Acid	2000.	IU
111-91-1	bis(2-Chloroethoxy)Methane	410.	IU
120-83-2	2,4-Dichlorophenol	410.	IU
120-82-1	1,2,4-Trichlorobenzene	410.	IU
91-20-3	Naphthalene	2900.	I
106-47-8	4-Chloroaniline	410.	IU
87-68-3	Hexachlorobutadiene	410.	IU
59-50-7	4-Chloro-3-Methylphenol	410.	IU
91-57-6	2-Methylnaphthalene	19000.	I E
77-47-4	Hexachlorocyclopentadiene	410.	IU
88-06-2	2,4,6-Trichlorophenol	410.	IU
95-95-4	2,4,5-Trichlorophenol	2000.	IU
91-58-7	2-Chloronaphthalene	410.	IU
88-74-4	2-Nitroaniline	2000.	IU
131-11-3	Dimethylphthalate	410.	IU
208-96-8	Acenaphthylene	410.	IU
606-20-2	2,6-Dinitrotoluene	410.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-08

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDO No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol:

30.1 (g/mL) G

Lab File ID: 091480811

Level: (low/med) LOW

Date Received: 9/21/91

X Moisture: not dec.

18. dec. 0.

Date Extracted: 9/23/91

Extraction: (Sepf/Cont/Sonc) SONE

Date Analyzed: 9/28/91

Cleanup: (Y/N) N

pH: 7.0

Dilution Factor:

1.00

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/kg) UG/KG G

99-09-2	3-Nitroaniline	2000.	IU
83-32-9	Acenaphthene	410.	IU
51-28-5	2,4-Dinitrophenol	2000.	IU
100-02-7	4-Nitrophenol	2000.	IU
132-64-9	Dibenzofuran	410.	IU
121-14-2	2,4-Dinitrotoluene	410.	IU
84-66-2	Diethylphthalate	410.	IU
7005-72-3	4-Chlorophenyl-phenylether	410.	IU
86-73-7	Fluorene	410.	IU
100-01-6	4-Nitroaniline	2000.	IU
534-52-1	4,6-Dinitro-2-Methylphenol	2000.	IU
86-30-6	N-Nitrosodiphenylamine (1)	410.	IU
101-55-3	4-Bromophenyl-phenylether	410.	IU
118-74-1	Hexachlorobenzene	410.	IU
87-86-5	Pentachlorophenol	2000.	IU
85-01-8	Phenanthrene	410.	IU
120-12-7	Anthracene	410.	IU
84-74-2	Di-n-butylphthalate	410.	IU
206-44-0	Fluoranthene	410.	IU
129-00-0	Pyrene	5300.	IU
85-68-7	Butylbenzylphthalate	410.	IU
91-94-1	3,3'-Dichlorobenzidine	810.	IU
56-55-3	Benzo(a)anthracene	410.	IU
218-01-9	Chrysene	1400.	IU
117-81-7	bis(2-Ethylhexyl)phthalate	2100.	IB
117-84-0	Di-n-octylphthalate	410.	IU
205-99-2	Benzo(b)fluoranthene	410.	IU
207-08-9	Benzo(k)fluoranthene	1100.	IU
50-32-8	Benzo(a)pyrene	470.	IU
193-39-5	Indeno(1,2,3-cd)pyrene	150.	IU
53-70-3	Dibenz(a,h)anthracene	410.	IU
191-24-2	Benzo(g,h,i)perylene	170.	IU

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-08

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: 091480811

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 18. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.00

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	g
1.	UNKNOWN	4.53	200000.	J A
2.	UNKNOWN HYDROCARBON	16.10	100000.	J
3.	UNKNOWN	16.23	100000.	J
4.	UNKNOWN	17.32	300000.	J
5.	UNKNOWN	18.58	300000.	J
6.	UNKNOWN HYDROCARBON	19.87	200000.	J
7.	UNKNOWN	19.90	100000.	J
8.	UNKNOWN HYDROCARBON	20.83	300000.	J
9.	UNKNOWN	21.90	300000.	J
10.	UNKNOWN HYDROCARBON	22.97	100000.	J
11.	UNKNOWN HYDROCARBON	23.88	50000.	J
12.	UNKNOWN HYDROCARBON	25.07	70000.	J
13.	UNKNOWN HYDROCARBON	25.67	20000.	J
14.	UNKNOWN HYDROCARBON	26.85	30000.	J
15.	UNKNOWN	28.12	20000.	J
16.	UNKNOWN HYDROCARBON	30.18	10000.	J
17.	UNKNOWN	30.73	10000.	J
18.	UNKNOWN	31.72	30000.	J
19.	UNKNOWN	34.25	10000.	J
20.	UNKNOWN HYDROCARBON	40.68	10000.	J
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DS-09

Lab Name: ANALYTICA_INCORPORATED___ Contract: _____

Lab Code: _____ Case No.: G_MIL SAS No.: _____ SDG No.: 9109148

Matrix (soil/water): WATER Lab Sample ID: 9109148-9_

Level (low/med): _____ Date Received: 09/21/91

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.7	B	N	F
7440-39-3	Barium	1110			P
7440-43-9	Cadmium	8.0	U		P
7440-47-3	Chromium	12.7	B		P
7439-92-1	Lead	52.0		S	F
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	2.0	U	WN	F
7440-22-4	Silver	10.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
 TCLP_METALS. __ICP_ANALYSIS_AT_2X_DILUTION. _____

VOLATILE ORGANICS ANALYSIS DATA SHEET

DS-09

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDQ No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480911

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 17.

Date Analyzed: 9/26/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	12.	U
74-83-9	-----Bromomethane	12.	U
75-01-4	-----Vinyl Chloride	12.	U
75-00-3	-----Chloroethane	12.	U
75-09-2	-----Methylene Chloride	9.	B
67-64-1	-----Acetone	12.	U
75-15-0	-----Carbon Disulfide	6.	U
75-35-4	-----1,1-Dichloroethene	6.	U
75-34-3	-----1,1-Dichloroethane	6.	U
540-59-0	-----trans-1,2-Dichloroethene	6.	U
156-59-2	-----cis-1,2-Dichloroethene	6.	U
67-66-3	-----Chloroform	6.	U
107-06-2	-----1,2-Dichloroethane	6.	U
78-93-3	-----2-Butanone	12.	U
71-55-6	-----1,1,1-Trichloroethane	6.	U
56-23-5	-----Carbon Tetrachloride	6.	U
75-27-4	-----Bromodichloromethane	6.	U
78-87-5	-----1,2-Dichloropropane	6.	U
10061-01-5	-----cis-1,3-Dichloropropene	6.	U
79-01-6	-----Trichloroethene	6.	U
124-48-1	-----Dibromochloromethane	6.	U
79-00-5	-----1,1,2-Trichloroethane	6.	U
71-43-2	-----Benzene	6.	U
10061-02-6	-----trans-1,3-Dichloropropene	6.	U
75-25-2	-----Bromoform	6.	U
108-10-1	-----4-Methyl-2-Pentanone	12.	U
591-78-6	-----2-Hexanone	12.	U
127-18-4	-----Tetrachloroethene	6.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	6.	U
108-88-3	-----Toluene	6.	U
108-90-7	-----Chlorobenzene	6.	U
100-41-4	-----Ethylbenzene	6.	U
100-42-5	-----Styrene	6.	U
1330-20-7	-----m+p-Xylenes	6.	U
95-47-6	-----o-Xylene	6.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-09

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091480911

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 17.

Date Analyzed: 9/26/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN	14.67	9.	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-09

Lab Name: AI Contract:
 Lab Code: AI Case No.: SAS No.: SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID:
 Sample wt/vol: 30.0 (g/mL) 0 Lab File ID: 0914809X1
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 17. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/28/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 30.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
108-95-2	Phenol	12000.	I U
111-44-4	bis(2-Chloroethyl)ether	12000.	I U
95-57-8	2-Chlorophenol	12000.	I U
541-73-1	1,3-Dichlorobenzene	12000.	I U
106-46-7	1,4-Dichlorobenzene	12000.	I U
100-51-6	Benzyl Alcohol	12000.	I U
95-50-1	1,2-Dichlorobenzene	12000.	I U
95-48-7	2-Methylphenol	12000.	I U
108-60-1	bis(2-Chloroisopropyl)Ether	12000.	I U
106-44-5	4-Methylphenol	12000.	I U
621-64-7	N-Nitroso-di-n-propylamine	12000.	I U
67-72-1	Hexachloroethane	12000.	I U
98-95-3	Nitrobenzene	12000.	I U
78-59-1	Isophorone	12000.	I U
88-75-5	2-Nitrophenol	12000.	I U
105-67-9	2,4-Dimethylphenol	12000.	I U
65-85-0	Benzoic Acid	60000.	I U
111-91-1	bis(2-Chloroethoxy)Methane	12000.	I U
120-83-2	2,4-Dichlorophenol	12000.	I U
120-82-1	1,2,4-Trichlorobenzene	12000.	I U
91-20-3	Naphthalene	1200.	I J
106-47-8	4-Chloroaniline	12000.	I U
87-68-3	Hexachlorobutadiene	12000.	I U
59-50-7	4-Chloro-3-Methylphenol	12000.	I U
91-57-6	2-Methylnaphthalene	2000.	I J
77-47-4	Hexachlorocyclopentadiene	12000.	I U
88-06-2	2,4,6-Trichlorophenol	12000.	I U
95-95-4	2,4,5-Trichlorophenol	60000.	I U
91-58-7	2-Chloronaphthalene	12000.	I U
88-74-4	2-Nitroaniline	60000.	I U
131-11-3	Dimethylphthalate	12000.	I U
208-96-8	Acenaphthylene	7500.	I J
606-20-2	2,6-Dinitrotoluene	12000.	I U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-09

Lab Name: AI Contract:
 Lab Code: AI Case No.: SAS No.: SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID:
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: 0914809X1
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 17. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/28/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 30.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
99-09-2	3-Nitroaniline	60000.	1U
83-32-9	Acenaphthene	14000.	
51-28-5	2,4-Dinitrophenol	60000.	1U
100-02-7	4-Nitrophenol	60000.	1U
132-64-9	Dibenzofuran	6400.	1J
121-14-2	2,4-Dinitrotoluene	12000.	1U
84-66-2	Diethylphthalate	12000.	1U
7005-72-3	4-Chlorophenyl-phenylether	12000.	1U
86-73-7	Fluorene	16000.	
100-01-6	4-Nitroaniline	60000.	1U
534-52-1	4,6-Dinitro-2-Methylphenol	60000.	1U
86-30-6	N-Nitrosodiphenylamine (1)	12000.	1U
101-55-3	4-Bromophenyl-phenylether	12000.	1U
118-74-1	Hexachlorobenzene	12000.	1U
87-86-5	Pentachlorophenol	60000.	1U
85-01-8	Phenanthrene	26000.	
120-12-7	Anthracene	12000.	1U
84-74-2	Di-n-butylphthalate	12000.	1U
206-44-0	Fluoranthene	35000.	
129-00-0	Pyrene	25000.	
85-68-7	Butylbenzylphthalate	12000.	1U
91-94-1	3,3'-Dichlorobenzidine	24000.	1U
56-55-3	Benzo(a)anthracene	12000.	1U
218-01-9	Chrysene	11000.	1J
117-81-7	bis(2-Ethylhexyl)phthalate	12000.	1U
117-84-0	Di-n-octylphthalate	12000.	1U
205-99-2	Benzo(b)fluoranthene	12000.	1U
207-08-9	Benzo(k)fluoranthene	12000.	1J
50-32-8	Benzo(a)pyrene	4900.	1J
193-39-5	Indeno(1,2,3-cd)pyrene	12000.	1U
53-70-3	Dibenz(a,h)anthracene	12000.	1U
191-24-2	Benzo(g,h,i)perylene	12000.	1U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-09

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 0914B

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) 0

Lab File ID: 0914B09X1

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 17. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/28/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 30.00

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.25	100000.	J A
2.	UNKNOWN	33.08	10000.	J
3.	UNKNOWN	33.25	10000.	J
4.	UNKNOWN HYDROCARBON	34.48	30000.	J
5.	UNKNOWN ACID	35.78	10000.	J
6.	UNKNOWN	35.98	60000.	J
7.	UNKNOWN	38.38	8000.	J
8.	UNKNOWN HYDROCARBON	38.75	60000.	J
9.	UNKNOWN HYDROCARBON	40.10	20000.	J
10.	UNKNOWN	41.43	10000.	J
11.	UNKNOWN	41.75	30000.	J
12.	UNKNOWN	42.63	30000.	J
13.	UNKNOWN	44.75	20000.	J
14.	UNKNOWN	44.90	60000.	J
15.	UNKNOWN	45.70	10000.	J
16.	UNKNOWN	46.47	20000.	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
34 000
DS-10

Lab Name: AI Contract: SDO No.: 09148
 Lab Code: AI Case No.: SAS No.: Lab Sample ID:
 Matrix: (soil/water) SOIL Lab File ID: 091481051
 Sample wt/vol: 1.0 (g/mL) G Date Received: 9/21/91
 Level: (low/med) LOW Date Analyzed: 9/26/91
 % Moisture: not dec. 20. Dilution Factor: 5/1.00
 Column: (pack/cap) CAP

P.6.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
74-87-3	Chloromethane	63.	U
74-83-9	Bromomethane	63.	U
75-01-4	Vinyl Chloride	63.	U
75-00-3	Chloroethane	63.	U
75-09-2	Methylene Chloride	32.	B
67-64-1	Acetone	62.	BU
75-15-0	Carbon Disulfide	31.	U
75-35-4	1,1-Dichloroethene	31.	U
75-34-3	1,1-Dichloroethane	31.	U
540-59-0	trans-1,2-Dichloroethene	31.	U
156-59-2	cis-1,2-Dichloroethene	31.	U
67-66-3	Chloroform	31.	U
107-06-2	1,2-Dichloroethane	31.	U
78-93-3	2-Butanone	63.	U
71-55-6	1,1,1-Trichloroethane	31.	U
56-23-5	Carbon Tetrachloride	31.	U
75-27-4	Bromodichloromethane	31.	U
78-87-5	1,2-Dichloropropane	31.	U
10061-01-5	cis-1,3-Dichloropropene	31.	U
79-01-6	Trichloroethene	31.	U
124-48-1	Dibromochloromethane	31.	U
79-00-5	1,1,2-Trichloroethane	31.	U
71-43-2	Benzene	31.	U
10061-02-6	trans-1,3-Dichloropropene	31.	U
75-25-2	Bromoform	31.	U
108-10-1	4-Methyl-2-Pentanone	63.	U
591-78-6	2-Hexanone	63.	U
127-18-4	Tetrachloroethene	31.	U
79-34-5	1,1,2,2-Tetrachloroethane	31.	U
108-88-3	Toluene	19.	J
108-90-7	Chlorobenzene	31.	U
100-41-4	Ethylbenzene	31.	U
100-42-5	Styrene	31.	U
1330-20-7	m+p-Xylenes	31.	U
95-47-6	o-Xylene	31.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LID NUMBER NO.

DS-10

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 091481051

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 20.

Date Analyzed: 9/26/91

Column: (pack/cap) CAP

Dilution Factor: 5100

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG P.G

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN	14.67	40.	J
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-10

Lab Name: AI Contract: SDG No.: 09148
 Lab Code: AI Case No.: SAS No.:
 Matrix: (soil/water) SOIL Lab Sample ID:
 Sample wt/vol: 1.0 (g/mL) 0 Lab File ID: 091481051
 Level: (low/med) MED Date Received: 9/21/91
 % Moisture: not dec. 20: dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 10.00%
5.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
108-95-2	Phenol	120000.	1U
111-44-4	bis(2-Chloroethyl)ether	120000.	1U
95-57-8	2-Chlorophenol	120000.	1U
541-73-1	1,3-Dichlorobenzene	120000.	1U
106-46-7	1,4-Dichlorobenzene	120000.	1U
100-51-6	Benzyl Alcohol	120000.	1U
95-50-1	1,2-Dichlorobenzene	120000.	1U
95-48-7	2-Methylphenol	120000.	1U
108-60-1	bis(2-Chloroisopropyl)Ether	120000.	1U
106-44-5	4-Methylphenol	120000.	1U
621-64-7	N-Nitroso-di-n-propylamine	120000.	1U
67-72-1	Hexachloroethane	120000.	1U
98-95-3	Nitrobenzene	120000.	1U
78-59-1	Isophorone	120000.	1U
88-75-5	2-Nitrophenol	120000.	1U
105-67-9	2,4-Dimethylphenol	120000.	1U
65-85-0	Benzoic Acid	610000.	1U
111-91-1	bis(2-Chloroethoxy)Methane	120000.	1U
120-83-2	2,4-Dichlorophenol	120000.	1U
120-82-1	1,2,4-Trichlorobenzene	120000.	1U
91-20-3	Naphthalene	120000.	1U
106-47-8	4-Chloroaniline	120000.	1U
87-68-3	Hexachlorobutadiene	120000.	1U
59-50-7	4-Chloro-3-Methylphenol	120000.	1U
91-57-6	2-Methylnaphthalene	120000.	1U
77-47-4	Hexachlorocyclopentadiene	120000.	1U
88-06-2	2,4,6-Trichlorophenol	120000.	1U
95-95-4	2,4,5-Trichlorophenol	610000.	1U
91-58-7	2-Chloronaphthalene	120000.	1U
88-74-4	2-Nitroaniline	610000.	1U
131-11-3	Dimethylphthalate	120000.	1U
208-96-8	Acenaphthylene	120000.	1U
606-20-2	2,6-Dinitrotoluene	120000.	1U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-10

Lab Name: AI Contract: _____
 Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID: _____
 Sample wt/vol: 1.0 (g/mL) 0 Lab File ID: 091481051
 Level: (low/med) MED Date Received: 9/21/91
 % Moisture: not dec. 20. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 CPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~10.00~~¹¹
5.33

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	610000.	U
83-32-9	Acenaphthene	120000.	U
51-28-5	2,4-Dinitrophenol	610000.	U
100-02-7	4-Nitrophenol	610000.	U
132-64-9	Dibenzofuran	120000.	U
121-14-2	2,4-Dinitrotoluene	120000.	U
84-66-2	Diethylphthalate	120000.	U
7005-72-3	4-Chlorophenyl-phenylether	120000.	U
86-73-7	Fluorene	120000.	U
100-01-6	4-Nitroaniline	610000.	U
534-52-1	4,6-Dinitro-2-Methylphenol	610000.	U
86-30-6	N-Nitrosodiphenylamine (1)	120000.	U
101-55-3	4-Bromophenyl-phenylether	120000.	U
118-74-1	Hexachlorobenzene	120000.	U
87-86-5	Pentachlorophenol	610000.	U
85-01-8	Phenanthrene	120000.	U
120-12-7	Anthracene	120000.	U
84-74-2	Di-n-butylphthalate	120000.	U
206-44-0	Fluoranthene	120000.	U
129-00-0	Pyrene	23000.	J
85-68-7	Butylbenzylphthalate	120000.	U
91-94-1	3,3'-Dichlorobenzidine	240000.	U
56-55-3	Benzo(a)anthracene	120000.	U
218-01-9	Chrysene	25000.	J
117-81-7	bis(2-Ethylhexyl)phthalate	120000.	U
117-84-0	Di-n-octylphthalate	120000.	U
205-99-2	Benzo(b)fluoranthene	120000.	U
207-08-9	Benzo(k)fluoranthene	120000.	U
50-32-8	Benzo(a)pyrene	34000.	J
193-39-5	Indeno(1,2,3-cd)pyrene	120000.	U
53-70-3	Dibenz(a,h)anthracene	120000.	U
191-24-2	Benzo(g,h,i)perylene	14000.	J

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-10

Lab Name: AI Contract: _____
 Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 09148
 Matrix: (soil/water) SDIL Lab Sample ID: _____
 Sample wt/vol: 1.0 (g/mL) G Lab File ID: 091481051
 Level: (low/med) MED Date Received: 9/21/91
 % Moisture: not dec. 20. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~10.00~~
5.00

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN HYDROCARBON	29.97	70000.	J
2.	UNKNOWN	37.22	60000.	J
3.	UNKNOWN ACID	38.08	100000.	J
4.	UNKNOWN ACID	38.27	200000.	J
5.	UNKNOWN	39.88	60000.	J
6.	UNKNOWN HYDROCARBON	41.20	60000.	J
7.	UNKNOWN HYDROCARBON	42.68	60000.	J
8.	UNKNOWN	43.78	70000.	J
9.	UNKNOWN HYDROCARBON	44.47	100000.	J
10.	UNKNOWN HYDROCARBON	46.35	100000.	J
11.	UNKNOWN HYDROCARBON	47.55	100000.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-11

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No. : 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 091481152

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 17.

Date Analyzed: 9/30/91

Column: (pack/cap) CAP

Dilution Factor: 5 x 100

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

g

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
74-87-3	-----Chloromethane	60.	U
74-83-9	-----Bromomethane	60.	U
75-01-4	-----Vinyl Chloride	60.	U
75-00-3	-----Chloroethane	60.	U
75-09-2	-----Methylene Chloride	16.	BU
67-64-1	-----Acetone	60.	U
75-15-0	-----Carbon Disulfide	30.	U
75-35-4	-----1,1-Dichloroethene	30.	U
75-34-3	-----1,1-Dichloroethane	30.	U
540-59-0	-----trans-1,2-Dichloroethene	30.	U
156-59-2	-----cis-1,2-Dichloroethene	30.	U
67-66-3	-----Chloroform	30.	U
107-06-2	-----1,2-Dichloroethane	30.	U
78-93-3	-----2-Butanone	60.	U
71-55-6	-----1,1,1-Trichloroethane	30.	U
56-23-5	-----Carbon Tetrachloride	30.	U
75-27-4	-----Bromodichloromethane	30.	U
78-87-5	-----1,2-Dichloropropane	30.	U
10061-01-5	-----cis-1,3-Dichloropropene	30.	U
79-01-6	-----Trichloroethene	30.	U
124-48-1	-----Dibromochloromethane	30.	U
79-00-5	-----1,1,2-Trichloroethane	30.	U
71-43-2	-----Benzene	30.	U
10061-02-6	-----trans-1,3-Dichloropropene	30.	U
75-25-2	-----Bromoform	30.	U
108-10-1	-----4-Methyl-2-Pentanone	60.	U
591-78-6	-----2-Hexanone	60.	U
127-18-4	-----Tetrachloroethene	30.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	30.	U
108-88-3	-----Toluene	30.	U
108-90-7	-----Chlorobenzene	30.	U
100-41-4	-----Ethylbenzene	30.	U
100-42-5	-----Styrene	30.	U
1330-20-7	-----m+p-Xylenes	30.	U
95-47-6	-----o-Xylene	30.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-11

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 091481152

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 17.

Date Analyzed: 9/30/91

Column: (pack/cap) CAP

Dilution Factor: 5X.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

P.C.

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-11

Lab Name: AI Contract: SDO No.: 09148

Lab Code: AI Case No.: SAS No.: SDO No.: 09148

Matrix: (soil/water) SOIL Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 091481111

Level: (low/med) LOW Date Received: 9/21/91

% Moisture: not dec. 17. dec. 0. Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
108-95-2	Phenol	790.	1U
111-44-4	bis(2-Chloroethyl)ether	790.	1U
95-57-8	2-Chlorophenol	790.	1U
541-73-1	1,3-Dichlorobenzene	790.	1U
106-46-7	1,4-Dichlorobenzene	790.	1U
100-51-6	Benzyl Alcohol	790.	1U
95-50-1	1,2-Dichlorobenzene	790.	1U
95-48-7	2-Methylphenol	790.	1U
108-60-1	bis(2-Chloroisopropyl)Ether	790.	1U
106-44-5	4-Methylphenol	790.	1U
621-64-7	N-Nitroso-di-n-propylamine	790.	1U
67-72-1	Hexachloroethane	790.	1U
98-95-3	Nitrobenzene	790.	1U
78-59-1	Isophorone	790.	1U
88-75-5	2-Nitrophenol	790.	1U
105-67-9	2,4-Dimethylphenol	790.	1U
65-85-0	Benzoic Acid	4000.	1U
111-91-1	bis(2-Chloroethoxy)Methane	790.	1U
120-83-2	2,4-Dichlorophenol	790.	1U
120-82-1	1,2,4-Trichlorobenzene	790.	1U
91-20-3	Naphthalene	790.	1U
106-47-8	4-Chloroaniline	790.	1U
87-68-3	Hexachlorobutadiene	790.	1U
59-50-7	4-Chloro-3-Methylphenol	790.	1U
91-57-6	2-Methylnaphthalene	790.	1U
77-47-4	Hexachlorocyclopentadiene	790.	1U
88-06-2	2,4,6-Trichlorophenol	790.	1U
95-95-4	2,4,5-Trichlorophenol	4000.	1U
91-58-7	2-Chloronaphthalene	790.	1U
88-74-4	2-Nitroaniline	4000.	1U
131-11-3	Dimethylphthalate	790.	1U
208-96-8	Acenaphthylene	790.	1U
606-20-2	2,6-Dinitrotoluene	790.	1U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-11

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: 091481111

Level: (low/med) LDW

Date Received: 9/21/91

% Moisture: not dec. 17. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SDNC

Date Analyzed: 9/30/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4000.	IU
83-32-9	Acenaphthene	790.	IU
51-28-5	2,4-Dinitrophenol	4000.	IU
100-02-7	4-Nitrophenol	4000.	IU
132-64-9	Dibenzofuran	790.	IU
121-14-2	2,4-Dinitrotoluene	790.	IU
84-66-2	Diethylphthalate	790.	IU
7005-72-3	4-Chlorophenyl-phenylether	790.	IU
86-73-7	Fluorene	790.	IU
100-01-6	4-Nitroaniline	4000.	IU
534-52-1	4,6-Dinitro-2-Methylphenol	4000.	IU
86-30-6	N-Nitrosodiphenylamine (1)	790.	IU
101-55-3	4-Bromophenyl-phenylether	790.	IU
118-74-1	Hexachlorobenzene	790.	IU
87-86-5	Pentachlorophenol	4000.	IU
85-01-8	Phenanthrene	790.	IU
120-12-7	Anthracene	790.	IU
84-74-2	Di-n-butylphthalate	790.	IU
206-44-0	Fluoranthene	84.	J
129-00-0	Pyrene	790.	IU
85-68-7	Butylbenzylphthalate	790.	IU
91-94-1	3,3'-Dichlorobenzidine	1600.	IU
56-55-3	Benzo(a)anthracene	790.	IU
218-01-9	Chrysene	790.	IU
117-81-7	bis(2-Ethylhexyl)phthalate	540.	BJ
117-84-0	Di-n-octylphthalate	790.	IU
205-99-2	Benzo(b)fluoranthene	790.	IU
207-08-9	Benzo(k)fluoranthene	790.	IU
50-32-8	Benzo(a)pyrene	790.	IU
193-39-5	Indeno(1,2,3-cd)pyrene	790.	IU
53-70-3	Dibenz(a,h)anthracene	790.	IU
191-24-2	Benzo(g,h,i)perylene	790.	IU

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-11

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDO No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: 091481111

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 17. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/30/91

SPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 2.00

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.33	7000.	J A
2.	UNKNOWN	33.18	4000.	J
3.	UNKNOWN	33.42	10000.	J
4.	UNKNOWN	34.05	4000.	J
5.	UNKNOWN	34.60	4000.	J
6.	UNKNOWN ACID	35.45	6000.	J
7.	UNKNOWN	35.62	7000.	J
8.	UNKNOWN HYDROCARBON	35.97	8000.	J
9.	UNKNOWN	39.48	20000.	J
10.	UNKNOWN	39.73	10000.	J
11.	UNKNOWN HYDROCARBON	40.60	1000.	J
12.	UNKNOWN	40.87	5000.	J
13.	UNKNOWN	42.38	10000.	J
14.	UNKNOWN	42.50	8000.	J
15.	UNKNOWN	43.28	10000.	J
16.	UNKNOWN HYDROCARBON	43.62	10000.	J
17.	UNKNOWN ACID	43.90	8000.	J
18.	UNKNOWN	44.25	8000.	J
19.	UNKNOWN	44.55	5000.	J
20.	UNKNOWN	44.88	5000.	J
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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

DS-12

Lab Name: ANALYTICA_INCORPORATED Contract: _____

Lab Code: _____ Case No.: G_MIL SAS No.: _____ SDG No.: 9109148

Matrix (soil/water): WATER Lab Sample ID: 9109148-12

Level (low/med): _____ Date Received: 09/21/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U	WN	F
7440-39-3	Barium	929			P
7440-43-9	Cadmium	8.0	U		P
7440-47-3	Chromium	26.5			P
7439-92-1	Lead	1320			F
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	4.0	U	WN	F
7440-22-4	Silver	10.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
 Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:
 TCLP_METALS. ICP_ANALYSIS_AT_2X_DILUTION.
 SELENIUM_ANALYZED_AT_A_2X_ANALYTICAL_DILUTION, LEAD_AT_A_50X.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-12

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 091481252

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 30.

Date Analyzed: 9/30/91

Column: (pack/cap) CAP

Dilution Factor: 5/100 *1.6*

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

G

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	71.	U
74-83-9	-----Bromomethane	71.	U
75-01-4	-----Vinyl Chloride	71.	U
75-00-3	-----Chloroethane	71.	U
75-09-2	-----Methylene Chloride	56.	B
67-64-1	-----Acetone	71.	U
75-15-0	-----Carbon Disulfide	36.	U
75-35-4	-----1,1-Dichloroethene	36.	U
75-34-3	-----1,1-Dichloroethane	36.	U
540-59-0	-----trans-1,2-Dichloroethene	36.	U
156-59-2	-----cis-1,2-Dichloroethene	36.	U
67-66-3	-----Chloroform	36.	U
107-06-2	-----1,2-Dichloroethane	36.	U
78-93-3	-----2-Butanone	71.	U
71-55-6	-----1,1,1-Trichloroethane	36.	U
56-23-5	-----Carbon Tetrachloride	36.	U
75-27-4	-----Bromodichloromethane	36.	U
78-87-5	-----1,2-Dichloropropane	36.	U
10061-01-5	-----cis-1,3-Dichloropropene	36.	U
79-01-6	-----Trichloroethene	36.	U
124-48-1	-----Dibromochloromethane	36.	U
79-00-5	-----1,1,2-Trichloroethane	36.	U
71-43-2	-----Benzene	36.	U
10061-02-6	-----trans-1,3-Dichloropropene	36.	U
75-25-2	-----Bromoform	36.	U
108-10-1	-----4-Methyl-2-Pentanone	71.	U
591-78-6	-----2-Hexanone	71.	U
127-18-4	-----Tetrachloroethene	36.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	36.	U
108-88-3	-----Toluene	100.	U
108-90-7	-----Chlorobenzene	36.	U
100-41-4	-----Ethylbenzene	36.	U
100-42-5	-----Styrene	36.	U
1330-20-7	-----m+p-Xylenes	36.	U
95-47-6	-----o-Xylene	36.	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CAN SAMPLE NO.

DS-12

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 091481252

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 30.

Date Analyzed: 9/30/91

Column: (pack/cap) CAP

Dilution Factor:

51.00
P.L.

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 6

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	5.87	100.	J
2. - -	UNKNOWN	7.43	50.	J
3. 110-62-3	Pentanal	11.73	50.	J
4. - -	UNKNOWN	14.83	60.	J
5. 111-71-7	Heptanal	18.27	80.	J
6. - -	UNKNOWN	19.85	100.	J
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-12

Lab Name: AI Contract: _____
 Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID: _____
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: 0914812X1
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 30. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 250.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
108-95-2	Phenol	120000.	1U
111-44-4	bis(2-Chloroethyl)ether	120000.	1U
95-57-8	2-Chlorophenol	120000.	1U
541-73-1	1,3-Dichlorobenzene	120000.	1U
106-46-7	1,4-Dichlorobenzene	120000.	1U
100-51-6	Benzyl Alcohol	120000.	1U
95-50-1	1,2-Dichlorobenzene	120000.	1U
95-48-7	2-Methylphenol	120000.	1U
108-60-1	bis(2-Chloroisopropyl)Ether	120000.	1U
106-44-5	4-Methylphenol	120000.	1U
621-64-7	N-Nitroso-di-n-propylamine	120000.	1U
67-72-1	Hexachloroethane	120000.	1U
98-95-3	Nitrobenzene	120000.	1U
78-59-1	Isophorone	120000.	1U
88-75-5	2-Nitrophenol	120000.	1U
105-67-9	2,4-Dimethylphenol	120000.	1U
65-85-0	Benzoic Acid	600000.	1U
111-91-1	bis(2-Chloroethoxy)Methane	120000.	1U
120-83-2	2,4-Dichlorophenol	120000.	1U
120-82-1	1,2,4-Trichlorobenzene	120000.	1U
91-20-3	Naphthalene	120000.	1U
106-47-8	4-Chloroaniline	120000.	1U
87-68-3	Hexachlorobutadiene	120000.	1U
59-50-7	4-Chloro-3-Methylphenol	120000.	1U
91-57-6	2-Methylnaphthalene	120000.	1U
77-47-4	Hexachlorocyclopentadiene	120000.	1U
88-06-2	2,4,6-Trichlorophenol	120000.	1U
95-95-4	2,4,5-Trichlorophenol	600000.	1U
91-58-7	2-Chloronaphthalene	120000.	1U
88-74-4	2-Nitroaniline	600000.	1U
131-11-3	Dimethylphthalate	120000.	1U
208-96-8	Acenaphthylene	120000.	1U
606-20-2	2,6-Dinitrotoluene	120000.	1U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-12

Lab Name: AI Contract: _____
 Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 0914B
 Matrix: (soil/water) SOIL Lab Sample ID: _____
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: 0914B12X1
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 30. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 250.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	g
99-09-2	3-Nitroaniline	600000.	IU
83-32-9	Acenaphthene	120000.	IU
51-28-5	2,4-Dinitrophenol	600000.	IU
100-02-7	4-Nitrophenol	600000.	IU
132-64-9	Dibenzofuran	120000.	IU
121-14-2	2,4-Dinitrotoluene	120000.	IU
84-66-2	Diethylphthalate	120000.	IU
7005-72-3	4-Chlorophenyl-phenylether	120000.	IU
86-73-7	Fluorene	120000.	IU
100-01-6	4-Nitroaniline	600000.	IU
534-52-1	4,6-Dinitro-2-Methylphenol	600000.	IU
86-30-6	N-Nitrosodiphenylamine (1)	120000.	IU
101-55-3	4-Bromophenyl-phenylether	120000.	IU
118-74-1	Hexachlorobenzene	120000.	IU
87-86-5	Pentachlorophenol	600000.	IU
85-01-8	Phenanthrene	120000.	IU
120-12-7	Anthracene	120000.	IU
84-74-2	Di-n-butylphthalate	120000.	IU
206-44-0	Fluoranthene	120000.	IU
129-00-0	Pyrene	120000.	IU
85-68-7	Butylbenzylphthalate	120000.	IU
91-94-1	3,3'-Dichlorobenzidine	240000.	IU
56-55-3	Benzo(a)anthracene	120000.	IU
218-01-9	Chrysene	120000.	IU
117-81-7	bis(2-Ethylhexyl)phthalate	35000.	IBJ
117-84-0	Di-n-octylphthalate	120000.	IU
205-99-2	Benzo(b)fluoranthene	120000.	IU
207-08-9	Benzo(k)fluoranthene	120000.	IU
50-32-8	Benzo(a)pyrene	120000.	IU
193-39-5	Indeno(1,2,3-cd)pyrene	120000.	IU
53-70-3	Dibenz(a,h)anthracene	120000.	IU
191-24-2	Benzo(g,h,i)perylene	120000.	IU

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-12

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0914812X1

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 30. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/30/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 250.00

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- - UNKNOWN	6.67	1000000.	J
2.	- - UNKNOWN ACID	25.98	500000.	J
3.	- - UNKNOWN ACID	28.35	500000.	J
4.	- - UNKNOWN ACID	30.35	3000000.	J
5.	- - UNKNOWN	30.88	600000.	J
6.	- - UNKNOWN ACID	31.43	500000.	J
7.	- - UNKNOWN ACID	31.78	300000.	J
8.	- - UNKNOWN	31.97.	200000.	J
9.	- - UNKNOWN	32.15	1000000.	J
10.	- - UNKNOWN ACID	33.85	800000.	J
11.	- - UNKNOWN	34.17	200000.	J
12.	- - UNKNOWN	38.08	100000.	J
13.	16725-43-2; 1,3-Dioxolane, 2,2-dimethyl-	38.42	200000.	J
14.	33001-45-5; Oleic acid, (2,2-dimethyl-1,	39.42	100000.	J
15.	32852-69-0; Octadecanoic acid, (2,2-dime	39.70	400000.	J
16.	- - UNKNOWN	43.85	500000.	J
17.	567-72-6; Cholesta-3,5-dien-7-one	47.35	400000.	J
18.	- - UNKNOWN	47.78	400000.	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. 440
DS-13

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDQ No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 091481311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 27.

Date Analyzed: 9/27/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	14.	IU
74-83-9	-----Bromomethane	14.	IU
75-01-4	-----Vinyl Chloride	14.	IU
75-00-3	-----Chloroethane	14.	IU
75-09-2	-----Methylene Chloride	7.	IU
67-64-1	-----Acetone	14.	IU
75-15-0	-----Carbon Disulfide	7.	IU
75-35-4	-----1,1-Dichloroethene	7.	IU
75-34-3	-----1,1-Dichloroethane	7.	IU
540-59-0	-----trans-1,2-Dichloroethene	7.	IU
156-59-2	-----cis-1,2-Dichloroethene	7.	IU
67-66-3	-----Chloroform	7.	IU
107-06-2	-----1,2-Dichloroethane	7.	IU
78-93-3	-----2-Butanone	14.	IU
71-55-6	-----1,1,1-Trichloroethane	7.	IU
56-23-5	-----Carbon Tetrachloride	7.	IU
75-27-4	-----Bromodichloromethane	7.	IU
78-87-5	-----1,2-Dichloropropane	7.	IU
10061-01-5	-----cis-1,3-Dichloropropene	7.	IU
79-01-6	-----Trichloroethene	7.	IU
124-48-1	-----Dibromochloromethane	7.	IU
79-00-5	-----1,1,2-Trichloroethane	7.	IU
71-43-2	-----Benzene	7.	IU
10061-02-6	-----trans-1,3-Dichloropropene	7.	IU
75-25-2	-----Bromoform	7.	IU
108-10-1	-----4-Methyl-2-Pentanone	14.	IU
591-78-6	-----2-Hexanone	14.	IU
127-18-4	-----Tetrachloroethene	7.	IU
79-34-5	-----1,1,2,2-Tetrachloroethane	7.	IU
108-88-3	-----Toluene	13.	I
108-90-7	-----Chlorobenzene	7.	IU
100-41-4	-----Ethylbenzene	25.	I
100-42-5	-----Styrene	3.	J
1330-20-7	-----m+p-Xylenes	110.	I
95-47-6	-----o-Xylene	16.	I

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-13

Name: AI

Contract:

Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Moisture: wt/vol: 5.0 (g/mL) G

Lab File ID: 091481311

Level: (low/med) LOW

Date Received: 9/21/91

Moisture: not dec. 27.

Date Analyzed: 9/27/91

Container: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
 (ug/L or ug/Kg) UG/KG

PEAK NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1				
2				
3				
4				
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11				
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20				

18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-13

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No. : 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: 091481311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 27. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SDNC

Date Analyzed: 9/30/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
108-95-2	Phenol	9200.	IU
111-44-4	bis(2-Chloroethyl)ether	9200.	IU
95-57-8	2-Chlorophenol	9200.	IU
541-73-1	1,3-Dichlorobenzene	9200.	IU
106-46-7	1,4-Dichlorobenzene	9200.	IU
100-51-6	Benzyl Alcohol	9200.	IU
95-50-1	1,2-Dichlorobenzene	9200.	IU
95-48-7	2-Methylphenol	9200.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	9200.	IU
106-44-5	4-Methylphenol	9200.	IU
621-64-7	N-Nitroso-di-n-propylamine	9200.	IU
67-72-1	Hexachloroethane	9200.	IU
98-95-3	Nitrobenzene	9200.	IU
78-59-1	Isophorone	9200.	IU
88-75-5	2-Nitrophenol	9200.	IU
105-67-9	2,4-Dimethylphenol	9200.	IU
65-85-0	Benzoic Acid	46000.	IU
111-91-1	bis(2-Chloroethoxy)Methane	9200.	IU
120-83-2	2,4-Dichlorophenol	9200.	IU
120-82-1	1,2,4-Trichlorobenzene	9200.	IU
91-20-3	Naphthalene	8500.	I J
106-47-8	4-Chloroaniline	9200.	IU
87-68-3	Hexachlorobutadiene	9200.	IU
59-50-7	4-Chloro-3-Methylphenol	9200.	IU
91-57-6	2-Methylnaphthalene	12000.	I
77-47-4	Hexachlorocyclopentadiene	9200.	IU
88-06-2	2,4,6-Trichlorophenol	9200.	IU
95-95-4	2,4,5-Trichlorophenol	46000.	IU
91-58-7	2-Chloronaphthalene	9200.	IU
88-74-4	2-Nitroaniline	46000.	IU
131-11-3	Dimethylphthalate	9200.	IU
208-96-8	Acenaphthylene	9200.	IU
606-20-2	2,6-Dinitrotoluene	9200.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-13

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: 091481311

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 27. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/30/91

OPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
99-09-2	3-Nitroaniline	46000.	1U
83-32-9	Acenaphthene	9200.	1U
51-28-5	2,4-Dinitrophenol	46000.	1U
100-02-7	4-Nitrophenol	46000.	1U
132-64-9	Dibenzofuran	2200.	J
121-14-2	2,4-Dinitrotoluene	9200.	1U
84-66-2	Diethylphthalate	9200.	1U
7005-72-3	4-Chlorophenyl-phenylether	9200.	1U
86-73-7	Fluorene	9200.	1U
100-01-6	4-Nitroaniline	46000.	1U
534-52-1	4,6-Dinitro-2-Methylphenol	46000.	1U
86-30-6	N-Nitrosodiphenylamine (1)	9200.	1U
101-55-3	4-Bromophenyl-phenylether	9200.	1U
118-74-1	Hexachlorobenzene	9200.	1U
87-86-5	Pentachlorophenol	46000.	1U
85-01-8	Phenanthrene	920.	J
120-12-7	Anthracene	9200.	1U
84-74-2	Di-n-butylphthalate	9200.	1U
206-44-0	Fluoranthene	9200.	1U
129-00-0	Pyrene	9200.	1U
85-68-7	Butylbenzylphthalate	9200.	1U
91-94-1	3,3'-Dichlorobenzidine	18000.	1U
56-55-3	Benzo(a)anthracene	9200.	1U
218-01-9	Chrysene	9200.	1U
117-81-7	bis(2-Ethylhexyl)phthalate	9200.	1U
117-84-0	Di-n-octylphthalate	9200.	1U
205-99-2	Benzo(b)fluoranthene	9200.	1U
207-08-9	Benzo(k)fluoranthene	9200.	1U
50-32-8	Benzo(a)pyrene	9200.	1U
193-39-5	Indeno(1,2,3-cd)pyrene	9200.	1U
53-70-3	Dibenz(a,h)anthracene	9200.	1U
191-24-2	Benzo(g,h,i)perylene	9200.	1U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-13

Lab Name: AI Contract: _____
 Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID: _____
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: 091481311
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 27. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 20.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 19

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.20	100000.	J A
2.	UNKNOWN	23.77	80000.	J
3.	UNKNOWN	24.28	80000.	J
4.	UNKNOWN ACID	30.88	300000.	J
5.	UNKNOWN	31.05	40000.	J
6.	UNKNOWN ACID	35.18	20000000.	J
7.	UNKNOWN	35.25	2000000.	J
8.	UNKNOWN	35.67	800000.	J
9.	UNKNOWN ACID	36.67	200000.	J
10.	UNKNOWN	36.82	100000.	J
11.	UNKNOWN	38.83	40000.	J
12.	UNKNOWN	42.02	30000.	J
13.	UNKNOWN	42.37	30000.	J
14.	UNKNOWN	44.73	20000.	J
15.	UNKNOWN	45.00	30000.	J
16.	UNKNOWN	45.25	40000.	J
17.	UNKNOWN ACID	45.88	20000.	J
18.	UNKNOWN	46.08	50000.	J
19.	UNKNOWN	47.38	20000.	J
20.				
21.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-14

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 91148141L

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 27.

Date Analyzed: 9/29/91

Column: (pack/cap) CAP

Dilution Factor: 500.00 PL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g
74-87-3	-----Chloromethane	690.	1U
74-83-9	-----Bromomethane	690.	1U
75-01-4	-----Vinyl Chloride	690.	1U
75-00-3	-----Chloroethane	690.	1U
75-09-2	-----Methylene Chloride	340.	1U
67-64-1	-----Acetone	690.	1U
75-15-0	-----Carbon Disulfide	340.	1U
75-35-4	-----1,1-Dichloroethene	340.	1U
75-34-3	-----1,1-Dichloroethane	340.	1U
540-59-0	-----trans-1,2-Dichloroethene	340.	1U
156-59-2	-----cis-1,2-Dichloroethene	340.	1U
67-66-3	-----Chloroform	340.	1U
107-06-2	-----1,2-Dichloroethane	340.	1U
78-93-3	-----2-Butanone	690.	1U
71-55-6	-----1,1,1-Trichloroethane	340.	1U
56-23-5	-----Carbon Tetrachloride	340.	1U
75-27-4	-----Bromodichloromethane	340.	1U
78-87-5	-----1,2-Dichloropropane	340.	1U
10061-01-5	-----cis-1,3-Dichloropropene	340.	1U
79-01-6	-----Trichloroethene	340.	1U
124-48-1	-----Dibromochloromethane	340.	1U
79-00-5	-----1,1,2-Trichloroethane	340.	1U
71-43-2	-----Benzene	340.	1U
10061-02-6	-----trans-1,3-Dichloropropene	340.	1U
75-25-2	-----Bromoform	340.	1U
108-10-1	-----4-Methyl-2-Pentanone	690.	1U
591-78-6	-----2-Hexanone	360.	1U
127-18-4	-----Tetrachloroethene	340.	1U
79-34-5	-----1,1,2,2-Tetrachloroethane	340.	1U
108-88-3	-----Toluene	340.	1U
108-90-7	-----Chlorobenzene	340.	1U
100-41-4	-----Ethylbenzene	340.	1U
100-42-5	-----Styrene	340.	1U
1330-20-7	-----m+p-Xylenes	340.	1U
95-47-6	-----o-Xylene	340.	1U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DS-14

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 91148141L

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 27.

Date Analyzed: 9/29/91

Column: (pack/cap) CAP

Dilution Factor: 50¹⁰.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

P.6

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	15.15	400.	J
2.	UNKNOWN HYDROCARBON	16.92	400.	J
3.	UNKNOWN KETONE	19.83	1000.	J
4.				
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-14

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.1 (g/mL) G

Lab File ID: 0914814X1

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 27. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/25/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: ~~20.00~~ ⁹¹
10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
108-95-2	Phenol	260000.	1U
111-44-4	bis(2-Chloroethyl)ether	260000.	1U
95-57-8	2-Chlorophenol	260000.	1U
541-73-1	1,3-Dichlorobenzene	260000.	1U
106-46-7	1,4-Dichlorobenzene	260000.	1U
100-51-6	Benzyl Alcohol	260000.	1U
95-50-1	1,2-Dichlorobenzene	260000.	1U
95-48-7	2-Methylphenol	260000.	1U
108-60-1	bis(2-Chloroisopropyl)Ether	260000.	1U
106-44-5	4-Methylphenol	260000.	1U
621-64-7	N-Nitroso-di-n-propylamine	260000.	1U
67-72-1	Hexachloroethane	260000.	1U
98-95-3	Nitrobenzene	260000.	1U
78-59-1	Isophorone	260000.	1U
88-75-5	2-Nitrophenol	260000.	1U
105-67-9	2,4-Dimethylphenol	260000.	1U
65-85-0	Benzoic Acid	1300000.	1U
111-91-1	bis(2-Chloroethoxy)Methane	260000.	1U
120-83-2	2,4-Dichlorophenol	260000.	1U
120-82-1	1,2,4-Trichlorobenzene	260000.	1U
91-20-3	Naphthalene	260000.	1U
106-47-8	4-Chloroaniline	260000.	1U
87-68-3	Hexachlorobutadiene	260000.	1U
59-50-7	4-Chloro-3-Methylphenol	260000.	1U
91-57-6	2-Methylnaphthalene	260000.	1U
77-47-4	Hexachlorocyclopentadiene	260000.	1U
88-06-2	2,4,6-Trichlorophenol	260000.	1U
95-95-4	2,4,5-Trichlorophenol	1300000.	1U
91-58-7	2-Chloronaphthalene	260000.	1U
88-74-4	2-Nitroaniline	1300000.	1U
131-11-3	Dimethylphthalate	260000.	1U
208-96-8	Acenaphthylene	260000.	1U
606-20-2	2,6-Dinitrotoluene	260000.	1U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-14

Lab Name: AI Contract: _____

Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 09148

Matrix: (soil/water) SOIL Lab Sample ID: _____

Sample wt/vol: 1.1 (g/mL) G Lab File ID: 0914814X1

Level: (low/med) MED Date Received: 9/21/91

% Moisture: not dec. 27. dec. 0. Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/25/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: ~~20.00~~ 10.55

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	UG/KG	g
---------	----------	-------	---

99-09-2-----3-Nitroaniline_____	1300000.	1U
83-32-9-----Acenaphthene_____	260000.	1U
51-28-5-----2,4-Dinitrophenol _____	1300000.	1U
100-02-7-----4-Nitrophenol _____	1300000.	1U
132-64-9-----Dibenzofuran_____	260000.	1U
121-14-2-----2,4-Dinitrotoluene_____	260000.	1U
84-66-2-----Diethylphthalate_____	260000.	1U
7005-72-3-----4-Chlorophenyl-phenylether__	260000.	1U
86-73-7-----Fluorene_____	260000.	1U
100-01-6-----4-Nitroaniline_____	1300000.	1U
534-52-1-----4,6-Dinitro-2-Methylphenol__	1300000.	1U
86-30-6-----N-Nitrosodiphenylamine (1)___	260000.	1U
101-55-3-----4-Bromophenyl-phenylether ___	260000.	1U
118-74-1-----Hexachlorobenzene _____	260000.	1U
87-86-5-----Pentachlorophenol _____	1300000.	1U
85-01-8-----Phenanthrene_____	260000.	1U
120-12-7-----Anthracene_____	260000.	1U
84-74-2-----Di-n-butylphthalate _____	260000.	1U
206-44-0-----Fluoranthene_____	260000.	1U
129-00-0-----Pyrene_____	260000.	1U
85-68-7-----Butylbenzylphthalate_____	260000.	1U
91-94-1-----3,3'-Dichlorobenzidine_____	510000.	1U
56-55-3-----Benzo(a)anthracene_____	260000.	1U
218-01-9-----Chrysene_____	260000.	1U
117-81-7-----bis(2-Ethylhexyl)phthalate___	110000.	1 U
117-84-0-----Di-n-octylphthalate _____	260000.	1U
205-99-2-----Benzo(b)fluoranthene_____	260000.	1U
207-08-9-----Benzo(k)fluoranthene_____	260000.	1U
50-32-8-----Benzo(a)pyrene_____	260000.	1U
193-39-5-----Indeno(1,2,3-cd)pyrene_____	260000.	1U
53-70-3-----Dibenz(a,h)anthracene _____	260000.	1U
191-24-2-----Benzo(g,h,i)perylene_____	260000.	1U

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-14

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.1 (g/mL) 0

Lab File ID: 0914814X1

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 27. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/25/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: $\frac{20.00}{10.00}$

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ACID	29.75	10000000.	J
2.	UNKNOWN	32.12	100000000.	J
3.	57-11-4 Octadecanoic acid	33.62	100000000.	J
4.	UNKNOWN ACID	33.92	4000000.	J
5.	UNKNOWN ACID	34.22	3000000.	J
6.	UNKNOWN	34.33	3000000.	J
7.	UNKNOWN	35.62	4000000.	J
8.	506-30-9 Eicosanoic acid	35.85	2000000.	J
9.	UNKNOWN	39.52	5000000.	J
10.	UNKNOWN	39.87	4000000.	J
11.	UNKNOWN ACID	40.23	1000000.	J
12.	UNKNOWN	40.60	500000.	J
13.	UNKNOWN	41.97	500000.	J
14.	UNKNOWN	42.30	500000.	J
15.	UNKNOWN	45.65	500000.	J
16.	UNKNOWN	46.10	500000.	J
17.	UNKNOWN	46.53	700000.	J
18.	UNKNOWN ACID	47.27	1000000.	J
19.	UNKNOWN	47.43	600000.	J
20.	UNKNOWN	47.72	600000.	J
21.				
22.				
23.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

LPA SHIFLE NO.

DS-15

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 911481515

Level: (low/med) LDW

Date Received: 9/21/91

% Moisture: not dec. 20.

Date Analyzed: 9/29/91

Column: (pack/cap) CAP

Dilution Factor: 5x.00 p.g.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	62.	U
74-83-9	-----Bromomethane	62.	U
75-01-4	-----Vinyl Chloride	62.	U
75-00-3	-----Chloroethane	62.	U
75-09-2	-----Methylene Chloride	22.	J
67-64-1	-----Acetone	62.	U
75-15-0	-----Carbon Disulfide	31.	U
75-35-4	-----1,1-Dichloroethene	31.	U
75-34-3	-----1,1-Dichloroethane	31.	U
540-59-0	-----trans-1,2-Dichloroethene	31.	U
156-59-2	-----cis-1,2-Dichloroethene	31.	U
67-66-3	-----Chloroform	31.	U
107-06-2	-----1,2-Dichloroethane	31.	U
78-93-3	-----2-Butanone	62.	U
71-55-6	-----1,1,1-Trichloroethane	31.	U
56-23-5	-----Carbon Tetrachloride	31.	U
75-27-4	-----Bromodichloromethane	31.	U
78-87-5	-----1,2-Dichloropropane	31.	U
10061-01-5	-----cis-1,3-Dichloropropene	31.	U
79-01-6	-----Trichloroethene	31.	U
124-48-1	-----Dibromochloromethane	31.	U
79-00-5	-----1,1,2-Trichloroethane	31.	U
71-43-2	-----Benzene	31.	U
10061-02-6	-----trans-1,3-Dichloropropene	31.	U
75-25-2	-----Bromoform	31.	U
108-10-1	-----4-Methyl-2-Pentanone	62.	U
591-78-6	-----2-Hexanone	62.	U
127-18-4	-----Tetrachloroethene	31.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	31.	U
108-88-3	-----Toluene	31.	U
108-90-7	-----Chlorobenzene	31.	U
100-41-4	-----Ethylbenzene	31.	U
100-42-5	-----Styrene	31.	U
1330-20-7	-----m+p-Xylenes	31.	U
95-47-6	-----o-Xylene	31.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-15

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 911481515

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 20.

Date Analyzed: 9/29/91

Column: (pack/cap) CAP

Dilution Factor:

5⁰⁰ P.C.

CONCENTRATION UNITS:
 (ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.				
2.				
3.				
4.				
5.				
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-15

Contract:

Lab Name: AI

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.2 (g/mL) 0

Lab File ID: 091481511

Level: (low/med) LOW

Date Received: 9/21/91

X Moisture: not dec. 20.

dec. 0.

Date Extracted: 9/23/91

Extraction: (Sepf/Cont/Sonc) SONC

Date Analyzed: 9/30/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor:

1.00

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

0

108-95-2	Phenol	410.	IU
111-44-4	bis(2-Chloroethyl)ether	410.	IU
95-57-8	2-Chlorophenol	410.	IU
541-73-1	1,3-Dichlorobenzene	410.	IU
105-46-7	1,4-Dichlorobenzene	410.	IU
100-51-6	Benzyl Alcohol	410.	IU
95-50-1	1,2-Dichlorobenzene	410.	IU
95-48-7	2-Methylphenol	410.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	410.	IU
106-44-5	4-Methylphenol	410.	IU
621-64-7	N-Nitroso-di-n-propylamine	410.	IU
67-72-1	Hexachloroethane	410.	IU
98-95-3	Nitrobenzene	410.	IU
78-59-1	Isophorone	410.	IU
88-75-5	2-Nitrophenol	410.	IU
105-67-9	2,4-Dimethylphenol	410.	IU
65-85-0	Benzoic Acid	2100.	IU
111-91-1	bis(2-Chloroethoxy)Methane	410.	IU
120-83-2	2,4-Dichlorophenol	410.	IU
120-82-1	1,2,4-Trichlorobenzene	410.	IU
91-20-3	Naphthalene	410.	IU
106-47-8	4-Chloroaniline	410.	IU
87-68-3	Hexachlorobutadiene	410.	IU
59-50-7	4-Chloro-3-Methylphenol	410.	IU
91-57-6	2-Methylnaphthalene	410.	IU
77-47-4	Hexachlorocyclopentadiene	410.	IU
88-06-2	2,4,6-Trichlorophenol	410.	IU
95-95-4	2,4,5-Trichlorophenol	2100.	IU
91-58-7	2-Chloronaphthalene	410.	IU
88-74-4	2-Nitroaniline	2100.	IU
131-11-3	Dimethylphthalate	410.	IU
208-96-8	Acenaphthylene	410.	IU
606-20-2	2,6-Dinitrotoluene	410.	IU

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-19

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDO No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: 091481511

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 20. dec. 0.

Date Extracted: 9/23/91

Extraction: (Sepf/Cont/Sonc) SONC

Date Analyzed: 9/30/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor:

1.00

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/kg) UG/KG 0

99-09-2	3-Nitroaniline	2100.	IU
83-32-9	Acenaphthene	410.	IU
51-28-5	2,4-Dinitrophenol	2100.	IU
100-02-7	4-Nitrophenol	2100.	IU
132-64-9	Dibenzofuran	410.	IU
121-14-2	2,4-Dinitrotoluene	410.	IU
84-66-2	Diethylphthalate	410.	IU
7005-72-3	4-Chlorophenyl-phenylether	410.	IU
86-73-7	Fluorene	410.	IU
100-01-6	4-Nitroaniline	2100.	IU
534-52-1	4,6-Dinitro-2-Methylphenol	2100.	IU
86-30-6	N-Nitrosodiphenylamine (1)	410.	IU
101-55-3	4-Bromophenyl-phenylether	410.	IU
118-74-1	Hexachlorobenzene	410.	IU
87-86-5	Pentachlorophenol	2100.	IU
85-01-8	Phenanthrene	410.	IU
120-12-7	Anthracene	410.	IU
84-74-2	Di-n-butylphthalate	410.	IU
206-44-0	Fluoranthene	410.	IU
129-00-0	Pyrene	410.	IU
85-68-7	Butylbenzylphthalate	410.	IU
91-94-1	3,3'-Dichlorobenzidine	830.	IU
56-55-3	Benzo(a)anthracene	410.	IU
218-01-9	Chrysene	410.	IU
117-81-7	bis(2-Ethylhexyl)phthalate	650.	IU
117-84-0	Di-n-octylphthalate	410.	IU
205-99-2	Benzo(b)fluoranthene	410.	IU
207-08-9	Benzo(k)fluoranthene	47.	IU
50-32-8	Benzo(a)pyrene	410.	IU
193-39-5	Indeno(1,2,3-cd)pyrene	410.	IU
53-70-3	Dibenz(a,h)anthracene	410.	IU
191-24-2	Benzo(g,h,i)perylene	410.	IU

(1) - Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-15

Lab Name: AI Contract: _____
 Lab Code: AI Case No.: _____ SAS No.: _____ SDQ No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID: _____
 Sample wt/vol: 30.2 (g/mL) 0 Lab File ID: 091481511
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 20. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 14

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.40	1000.	J A
2.	UNKNOWN	4.67	200000.	J A
3.	UNKNOWN	5.02	20000.	J A
4.	UNKNOWN	5.98	2000.	J A
5.	UNKNOWN	7.67	400.	J
6.	UNKNOWN	12.88	500.	J
7.	UNKNOWN	30.00	400.	J
8.	UNKNOWN HYDROCARBON	34.38	200.	J
9.	UNKNOWN HYDROCARBON	35.85	300.	J
10.	UNKNOWN HYDROCARBON	37.25	300.	J
11.	UNKNOWN ACID	38.20	700.	J
12.	UNKNOWN HYDROCARBON	38.60	500.	J
13.	UNKNOWN HYDROCARBON	39.92	200.	J
14.	UNKNOWN	46.00	300.	J
15.				
16.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA 821-B-88-001

DS-16

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914816C2

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 24.

Date Analyzed: 9/30/91

Column: (pack/cap) CAP

Dilution Factor: 100 ~~25~~.00 P.G.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
74-87-3	-----Chloromethane	1300.	U
74-83-9	-----Bromomethane	1300.	U
75-01-4	-----Vinyl Chloride	1300.	U
75-00-3	-----Chloroethane	1300.	U
75-09-2	-----Methylene Chloride	650.	U
67-64-1	-----Acetone	1300.	U
75-15-0	-----Carbon Disulfide	650.	U
75-35-4	-----1,1-Dichloroethene	650.	U
75-34-3	-----1,1-Dichloroethane	650.	U
540-59-0	-----trans-1,2-Dichloroethene	650.	U
156-59-2	-----cis-1,2-Dichloroethene	650.	U
67-66-3	-----Chloroform	650.	U
107-06-2	-----1,2-Dichloroethane	650.	U
78-93-3	-----2-Butanone	1300.	U
71-55-6	-----1,1,1-Trichloroethane	650.	U
56-23-5	-----Carbon Tetrachloride	650.	U
75-27-4	-----Bromodichloromethane	650.	U
78-87-5	-----1,2-Dichloropropane	650.	U
10061-01-5	-----cis-1,3-Dichloropropene	650.	U
79-01-6	-----Trichloroethene	650.	U
124-48-1	-----Dibromochloromethane	650.	U
79-00-5	-----1,1,2-Trichloroethane	650.	U
71-43-2	-----Benzene	650.	U
10061-02-6	-----trans-1,3-Dichloropropene	650.	U
75-25-2	-----Bromoform	650.	U
108-10-1	-----4-Methyl-2-Pentanone	1300.	U
591-78-6	-----2-Hexanone	1800.	U
127-18-4	-----Tetrachloroethene	650.	U
79-34-5	-----1,1,2,2-Tetrachloroethane	650.	U
108-88-3	-----Toluene	650.	U
108-90-7	-----Chlorobenzene	650.	U
100-41-4	-----Ethylbenzene	650.	U
100-42-5	-----Styrene	650.	U
1330-20-7	-----m+p-Xylenes	650.	U
95-47-6	-----o-Xylene	650.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-16

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: 0914816C2

Level: (low/med) MED

Date Received: 9/21/91

% Moisture: not dec. 24.

Date Analyzed: 9/30/91

Column: (pack/cap) CAP

Dilution Factor: *100/20.00*

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 10

P.C.

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.	UNKNOWN HYDROCARBON	6.92	2000.	J
2.	UNKNOWN	6.95	2000.	J
3.	UNKNOWN HYDROCARBON	10.47	20000.	J
4.	UNKNOWN HYDROCARBON	10.50	20000.	J
5.	UNKNOWN HYDROCARBON	13.72	3000.	J
6.	UNKNOWN HYDROCARBON	13.68	20000.	J
7.	UNKNOWN HYDROCARBON	16.92	1000.	J
8.	UNKNOWN	18.08	2000.	J
9.	UNKNOWN HYDROCARBON	19.75	1000.	J
10.	UNKNOWN	20.07	1000.	J
11.				
12.				
13.				
14.				
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18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-16

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0914816X1

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 24. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/30/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 300.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
---------	----------	---	---

108-95-2	Phenol	130000.	1U
111-44-4	bis(2-Chloroethyl)ether	130000.	1U
95-57-8	2-Chlorophenol	130000.	1U
541-73-1	1,3-Dichlorobenzene	130000.	1U
106-46-7	1,4-Dichlorobenzene	130000.	1U
100-51-6	Benzyl Alcohol	130000.	1U
95-50-1	1,2-Dichlorobenzene	130000.	1U
95-48-7	2-Methylphenol	130000.	1U
108-60-1	bis(2-Chloroisopropyl)Ether	130000.	1U
106-44-5	4-Methylphenol	130000.	1U
621-64-7	N-Nitroso-di-n-propylamine	130000.	1U
67-72-1	Hexachloroethane	130000.	1U
98-95-3	Nitrobenzene	130000.	1U
78-59-1	Isophorone	130000.	1U
88-75-5	2-Nitrophenol	130000.	1U
105-67-9	2,4-Dimethylphenol	130000.	1U
65-85-0	Benzoic Acid	650000.	1U
111-91-1	bis(2-Chloroethoxy)Methane	130000.	1U
120-83-2	2,4-Dichlorophenol	130000.	1U
120-82-1	1,2,4-Trichlorobenzene	130000.	1U
91-20-3	Naphthalene	130000.	1U
106-47-8	4-Chloroaniline	130000.	1U
87-68-3	Hexachlorobutadiene	130000.	1U
59-50-7	4-Chloro-3-Methylphenol	130000.	1U
91-57-6	2-Methylnaphthalene	130000.	1U
77-47-4	Hexachlorocyclopentadiene	130000.	1U
88-06-2	2,4,6-Trichlorophenol	130000.	1U
95-95-4	2,4,5-Trichlorophenol	650000.	1U
91-58-7	2-Chloronaphthalene	130000.	1U
88-74-4	2-Nitroaniline	650000.	1U
131-11-3	Dimethylphthalate	130000.	1U
208-96-8	Acenaphthylene	130000.	1U
606-20-2	2,6-Dinitrotoluene	130000.	1U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DS-16

Lab Name: AI Contract:
 Lab Code: AI Case No.: SAS No.: SDG No.: 09148
 Matrix: (soil/water) SOIL Lab Sample ID:
 Sample wt/vol: 30.0 (g/mL) G Lab File ID: 0914816X1
 Level: (low/med) LOW Date Received: 9/21/91
 Moisture: not dec. 24. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 9/30/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 300.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	G
99-09-2	3-Nitroaniline	650000.	1U
83-32-9	Acenaphthene	130000.	1U
51-28-5	2,4-Dinitrophenol	650000.	1U
100-02-7	4-Nitrophenol	650000.	1U
132-64-9	Dibenzofuran	130000.	1U
121-14-2	2,4-Dinitrotoluene	130000.	1U
84-66-2	Diethylphthalate	130000.	1U
7005-72-3	4-Chlorophenyl-phenylether	130000.	1U
86-73-7	Fluorene	130000.	1U
100-01-6	4-Nitroaniline	650000.	1U
534-52-1	4,6-Dinitro-2-Methylphenol	650000.	1U
86-30-6	N-Nitrosodiphenylamine (1)	130000.	1U
101-55-3	4-Bromophenyl-phenylether	130000.	1U
118-74-1	Hexachlorobenzene	130000.	1U
87-86-5	Pentachlorophenol	650000.	1U
85-01-8	Phenanthrene	130000.	1U
120-12-7	Anthracene	130000.	1U
84-74-2	Di-n-butylphthalate	130000.	1U
206-44-0	Fluoranthene	130000.	1U
129-00-0	Pyrene	130000.	1U
85-68-7	Butylbenzylphthalate	130000.	1U
91-94-1	3,3'-Dichlorobenzidine	260000.	1U
56-55-3	Benzo(a)anthracene	130000.	1U
218-01-9	Chrysene	130000.	1U
117-81-7	bis(2-Ethylhexyl)phthalate	54000.	1BU
117-84-0	Di-n-octylphthalate	130000.	1U
205-99-2	Benzo(b)fluoranthene	130000.	1U
207-08-9	Benzo(k)fluoranthene	130000.	1U
50-32-8	Benzo(a)pyrene	130000.	1U
193-39-5	Indeno(1,2,3-cd)pyrene	130000.	1U
53-70-3	Dibenz(a,h)anthracene	130000.	1U
191-24-2	Benzo(g,h,i)perylene	130000.	1U

IF
SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DS-16

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09148

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) 0

Lab File ID: 0914816X1

Level: (low/med) LDW

Date Received: 9/21/91

% Moisture: not dec. 24. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 9/30/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 300.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2370-88-9 Cycloctetrasiloxane, 2,4,6,8-	3.80	1000000.	J
2.	- - UNKNOWN	6.85	1000000.	J
3.	- - UNKNOWN	10.32	600000.	J
4.	- - UNKNOWN ACID	25.47	600000.	J
5.	- - UNKNOWN ACID	30.38	20000000.	J
6.	- - UNKNOWN ACID	30.62	4000000.	J
7.	- - UNKNOWN ACID	30.75	4000000.	J
8.	- - UNKNOWN	30.90	2000000.	J
9.	- - UNKNOWN ACID	31.45	50000.	J
10.	- - UNKNOWN ACID	33.80	40000000.	J
11.	- - UNKNOWN ACID	33.93	8000000.	J
12.	- - UNKNOWN ACID	34.02	10000000.	J
13.	- - UNKNOWN ACID	34.22	5000000.	J
14.	- - UNKNOWN	35.72	60000.	J
15.	- - UNKNOWN	36.00	100000.	J
16.	- - UNKNOWN ACID	38.05	90000.	J
17.	- - UNKNOWN	39.27	60000.	J
18.	- - UNKNOWN ACID	40.50	200000.	J
19.	- - UNKNOWN ACID	41.87	100000.	J
20.	- - UNKNOWN	47.75	400000.	J
21.				
22.				
23.				
24.				
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27.				
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30.				

Sample Id: 200048607

Waste Profile No: III AN0722

Lab Asystant No:

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

SOLVENT SCREEN (continued):	Result	PQL	Date
Xylenes	0 - BQL	.1 Wgt %	11/04/91
Styrene	0 - BQL	.1 Wgt %	11/04/91
2-Ethoxyethanol Acetate	0 - BQL	.1 Wgt %	11/04/91
Bromoform	0 - BQL	.1 Wgt %	11/04/91
Cyclohexanone	0 - BQL	.1 Wgt %	11/04/91
2-Butoxyethanol	0 - BQL	.1 Wgt %	11/04/91
Dichlorobenzene	0 - BQL	.1 Wgt %	11/04/91
Hydrocarbons Hc	0 - 0.78	.1 Wgt %	11/04/91
High-Boiling Organics	0 - BQL	.1 Wgt %	11/04/91

COMMENTS:

Multiply PQL by Dilution Factor of 1.00
The following compound groups may coelute. The results
above are at the highest possible concentration.
[Trichlorofluoromethane and Methanol], [Diethyl ether] and
1,1,2-Trichlorotrifluoroethane], [Dichloromethane and
Isopropanol], [i-Butanol and Trichloroethylene],
[n-Butanol, 1,4-Dioxane and Propyl Acetate], [Toluene and
2-Ethoxyethanol], [Chlorobenzene and Ethyl Benzene] and
[2-Butoxyethanol and Cyclohexanone].

Sample Id: 200048607

Waste Profile No: III AN0722

Lab Asystant No:

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

CERTIFICATION: Except as explicitly noted, all analytical data reported above were obtained under my
direction and supervision. For Chemical Waste Management, Inc. companies, sample preparation and
analytical methods and analytical equipment specified or approved in the facility's waste analysis plan
were used in conducting this analysis. This laboratory follows a quality assurance control program.

Report Date Nov 6, 1991

Ray Outkowsk Ray Outkowsk
Frank Thomas
Lab Manager

TC Matrix Corrected Results Attached

TECHNICAL CENTER ANALYTICAL LABORATORY
SPECTROSCOPY

SampleID:200048607

Correction Values from Sample ID: 1.)200048607
Matrix: LIQUID 2.)

TC MATRIX CORRECTED RESULTS

TEST	Correction Factors	RESULT (PPM)
Silver	1.40	<0.71
Barium	95.71	0.24
Cadmium	97.67	<0.01
Chromium	94.09	<0.02
Copper	97.40	<0.02
Nickel	98.77	<0.03
Lead	92.85	<0.05
Zinc	95.50	0.09
Mercury	100.00	<0.002
Arsenic	107.00	<0.01
Selenium	104.00	<0.01

Signature: John WojcikDate: 11-6-91

The above results are matrix spike recovery corrected results as specified in the June 29, 1990 TC Final rule. The uncorrected results are provided on a separate report.



#2 A

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

Second set
Analysis on
Torch Lake water
TCLP Chloroform - 0.03
Profile # AU070

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
708/967-6666
FAX: 708/967-6735

LABORATORY REPORT

30771

Chemical Waste Management
7250 W. College Drive
Palos Heights, IL 60463

Project Name: Torch Lake Project

Report Date: 2/3/92
Sample Received: 1/29/92

Sample Description: Waste Water
Sample No.: 13454

Reactive Sulfide	<2
Total Cyanide	0.1 by distillation
pH (units)	7.4
Flashpoint (closed cup)	>212°F

Analysis Performed on TCLP Extract

Arsenic	<0.2
Barium	<0.1
Cadmium	<0.1
Copper	<0.1
Chromium	<0.1
Lead	<0.1
Mercury	<0.01
Nickel	<0.1
Selenium	<0.2
Silver	<0.1
Zinc	<0.1

All results expressed as ppm unless otherwise indicated.

Analyses performed using "Standard Methods for the Examination of Water and Wastewater", 17th Edition.

Ivone Manawka

LABORATORY DIRECTOR

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SL-01

Lab Name: ANALYTICA_INCORPORATED Contract: _____

Lab Code: _____ Case No.: G_MIL SAS No.: _____ SDG No.: 9109148

Matrix (soil/water): WATER Lab Sample ID: 9109148-17

Level (low/med): _____ Date Received: 09/21/91

% Solids: _____ 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U	N	F
7440-39-3	Barium	716			P
7440-43-9	Cadmium	8.0	U		P
7440-47-3	Chromium	66.2			P
7439-92-1	Lead	17.6		S	F
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	2.0	U	WN	F
7440-22-4	Silver	10.0	U		R

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
 Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
 TCLP_METALS. __ICP_ANALYSIS_AT_2X_DILUTION. _____

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SL-03

Lab Name: ANALYTICA_INCORPORATED Contract: _____

Lab Code: _____ Case No.: G_MIL SAS No.: _____ SDG No.: 9109148

Matrix (soil/water): WATER Lab Sample ID: 9109148-19

Level (low/med): _____ Date Received: 09/21/91

% Solids: ___0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	1.0	U	N	F
7440-39-3	Barium	670			P
7440-43-9	Cadmium	8.0	U		P
7440-47-3	Chromium	48.2			P
7439-92-1	Lead	14.6		S	F
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	2.0	U	WN	F
7440-22-4	Silver	10.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____
Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
TCLP_METALS. ICP_ANALYSIS_AT_2X_DILUTION. _____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LW-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No. : 09147

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: 091470111

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 100.

Date Analyzed: 9/24/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	1.	BJ
67-64-1	Acetone	8.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	trans-1,2-Dichloroethene	5.	U
156-59-2	cis-1,2-Dichloroethene	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	2.	J
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	m+p-Xylenes	5.	U
95-47-6	o-Xylene	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

LW-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09147

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: 091470111

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 100.

Date Analyzed: 9/24/91

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

18
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LW-01

Lab Name: AI Contract: _____
 Lab Code: AI Case No.: _____ SAS No.: _____ SDG No.: 09147
 Matrix: (soil/water) WATER Lab Sample ID: _____
 Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 091470111
 Level: (low/med) LOW Date Received: 9/21/91
 % Moisture: not dec. 100. dec. 0. Date Extracted: 9/23/91
 Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 9/24/91
 GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	G
108-95-2	Phenol	3.	J
111-44-4	bis(2-Chloroethyl)ether	11.	IU
95-57-8	2-Chlorophenol	11.	IU
541-73-1	1,3-Dichlorobenzene	11.	IU
106-46-7	1,4-Dichlorobenzene	11.	IU
100-51-6	Benzyl Alcohol	11.	IU
95-50-1	1,2-Dichlorobenzene	11.	IU
95-48-7	2-Methylphenol	11.	IU
108-60-1	bis(2-Chloroisopropyl)Ether	11.	IU
106-44-5	4-Methylphenol	3.	J
621-64-7	N-Nitroso-di-n-propylamine	11.	IU
67-72-1	Hexachloroethane	11.	IU
98-95-3	Nitrobenzene	11.	IU
78-59-1	Isophorone	11.	IU
88-75-5	2-Nitrophenol	11.	IU
105-67-9	2,4-Dimethylphenol	11.	IU
65-85-0	Benzoic Acid	53.	IU
111-91-1	bis(2-Chloroethoxy)Methane	11.	IU
120-83-2	2,4-Dichlorophenol	11.	IU
120-82-1	1,2,4-Trichlorobenzene	11.	IU
91-20-3	Naphthalene	11.	IU
106-47-8	4-Chloroaniline	11.	IU
87-68-3	Hexachlorobutadiene	11.	IU
59-50-7	4-Chloro-3-Methylphenol	11.	IU
91-57-6	2-Methylnaphthalene	11.	IU
77-47-4	Hexachlorocyclopentadiene	11.	IU
88-06-2	2,4,6-Trichlorophenol	11.	IU
95-95-4	2,4,5-Trichlorophenol	53.	IU
91-58-7	2-Chloronaphthalene	11.	IU
88-74-4	2-Nitroaniline	53.	IU
131-11-3	Dimethylphthalate	11.	IU
208-96-8	Acenaphthylene	11.	IU
606-20-2	2,6-Dinitrotoluene	11.	IU

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LW-01

Lab Name: AI

Contract:

Lab Code: AI

Case No.:

SAS No.:

SDG No.: 09147

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 950.0 (g/mL) ML

Lab File ID: 091470111

Level: (low/med) LOW

Date Received: 9/21/91

% Moisture: not dec. 100. dec. 0.

Date Extracted: 9/23/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 9/24/91

GPC Cleanup: (Y/N) N

pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	G
---------	----------	--	---

99-09-2-----3-Nitroaniline	53.	IU
83-32-9-----Acenaphthene	11.	IU
51-28-5-----2,4-Dinitrophenol	53.	IU
100-02-7-----4-Nitrophenol	53.	IU
132-64-9-----Dibenzofuran	11.	IU
121-14-2-----2,4-Dinitrotoluene	11.	IU
84-66-2-----Diethylphthalate	11.	IU
7005-72-3-----4-Chlorophenyl-phenylether	11.	IU
86-73-7-----Fluorene	11.	IU
100-01-6-----4-Nitroaniline	53.	IU
534-52-1-----4,6-Dinitro-2-Methylphenol	53.	IU
86-30-6-----N-Nitrosodiphenylamine (1)	11.	IU
101-55-3-----4-Bromophenyl-phenylether	11.	IU
118-74-1-----Hexachlorobenzene	11.	IU
87-86-5-----Pentachlorophenol	53.	IU
85-01-8-----Phenanthrene	11.	IU
120-12-7-----Anthracene	11.	IU
84-74-2-----Di-n-butylphthalate	11.	IU
206-44-0-----Fluoranthene	11.	IU
129-00-0-----Pyrene	11.	IU
85-68-7-----Butylbenzylphthalate	11.	IU
91-94-1-----3,3'-Dichlorobenzidine	21.	IU
56-55-3-----Benzo(a)anthracene	11.	IU
218-01-9-----Chrysene	11.	IU
117-81-7-----bis(2-Ethylhexyl)phthalate	2.	I U
117-84-0-----Di-n-octylphthalate	11.	IU
205-99-2-----Benzo(b)fluoranthene	11.	IU
207-08-9-----Benzo(k)fluoranthene	11.	IU
50-32-8-----Benzo(a)pyrene	11.	IU
193-39-5-----Indeno(1,2,3-cd)pyrene	11.	IU
53-70-3-----Dibenz(a,h)anthracene	11.	IU
191-24-2-----Benzo(g,h,i)perylene	11.	IU

(1) - Cannot be separated from diphenylamine

APPENDIX E

WASTE PROFILES

WASTE PROFILE

Profile #

() Check here if this is a Recertification LOCATION OF ORIGINAL CWM of Indiana, Inc.

GENERAL INFORMATION

1. Generator Name: TORCH LAKE DRUM PRP GROUP Generator USEPA ID: MIP200000635
2. Generator Address: ROUTE M-26 Billing Address: CHEMICAL WASTE MANAGEMENT
() Same 7250 WEST COLLEGE DRIVE
LAKE LINDEN MI 49945
3. Technical Contact/Phone: GARY KRUGER 312/263-6703 PALOS HEIGHTS IL 60463
4. Alternate Billing Contact/Phone: PAT BOLGER 708/361-8400

PROPERTIES AND COMPOSITION

5. Process Generating Waste: DRUM CONSOLIDATION FROM SUPERFUND CLEAN UP SITE
6. Waste Name: CRUSHED DRUMS, DRUM CONTENTS, DEBRIS (BRICKS & ROCKS)

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes () No (X)
B. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U):

State Waste Codes:

8. Physical State @ 70F: A. Solid (X) Liquid () Both () Gas () B. Single Layer () Multilayer () C. Free liq. range ___ to ___

9A. pH: Range 3.5 to 9.0 or Not applicable () B. Strong Odor (); describe

10. Liquid Flash Point: < 73F () 73-99F () 100-139F () 140-199F () >= 200F (X) N.A. () Closed Cup (X) Open Cup ()

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Units
WAX	39 to 50	%
DEBRIS (BRICKS, ROCKS)	10 to 25	%
PPE	1 to 5	%
CRUSHED DRUMS (RCRA EMPTY)	30 to 50	%
	to	
	to	
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):		130.000000

12. OTHER: PCBs if yes, concentration ppm, PCBs regulated by 40 CFR 761 (), Pyrophoric () Explosive ()
Radioactive () Benzene if yes, concentration ppm. Shock Sensitive () Oxidizer ()
Carcinogen () Infectious () Other

13. If waste subject to the land ban & meets treatment standards, check here: & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid (X) Bulk Liquid () Drum () Type/Size: ROLLOFF Other

15. ANTICIPATED ANNUAL VOLUME: 60 Units: CUBIC YARDS Shipping Frequency: ONE TIME

SAMPLING INFORMATION

Sample Tracking Number: 0006825

16a. Sample source (drum, lagoon, pond, tank, vat, etc.): DRUM
Date Sampled: Sampler's Name/Company: DAN ZURICK/PAT BOLGER CWM ENRAC

16b. Generator's Agent Supervising Sampling: GARY KRUGER 17. () No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature

Name and Title

Date

32. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethylene	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, 6 Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2,4,5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Date Printed 02/10/92

AN0717

Profile #

<p>25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION</p> <p style="text-align: center;">TOTAL</p> <p>Beryllium as Be _____ ppm</p> <p>Potassium as K _____ ppm</p> <p>Sodium as Na _____ ppm</p> <p>Bromine as Br _____ %</p> <p>Chlorine as Cl _____ %</p> <p>Fluorine as F _____ %</p> <p>Sulfur as S _____ %</p>	<p>26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)</p> <p style="text-align: center;">RANGE</p> <p>A. Heat Value (Btu/lb): _____</p> <p>B. Water: _____</p> <p>C. Viscosity (cps): _____ @ _____ F _____ 100 F _____ 150 F</p> <p>D. Ash: _____ %</p> <p>E. Settleable solids: _____ %</p> <p>F. Vapor Pressure @ STP (mm/Hg): _____</p> <p>G. Is this waste a pumpable liquid? Yes _ No _</p> <p>H. Can this waste be heated to improve flow? Yes _ No _</p> <p>I. Is this waste soluble in water? Yes _ No _</p> <p>J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes _ No _</p>
---	---

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes _ No X

B. Proper Shipping Name: NON REGULATED MATERIAL

C. Hazard Class: Non-Regulated Mat.

I.D. _____

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): _____

28. SPECIAL HANDLING INFORMATION

Material Safety Data Sheets Attached

29. OTHER INFORMATION

WASTE ISN'T A DIOXIN OR SOLVENT WASTE (F020,F021, F022,F023,F025,F027,F028, OR F001,F002,F003,F004, F005) AS DEFINED BY 40 CFR 261.31**WASTE DOES NOTCONTAIN >1000 ppm HOC'S FROM APP. III(40 CFR 268).

THERE ARE NO FREE LIQUIDS AS BY PAINT FILTER TEST.NO OTHER CODES APPLY,LISTED OR CHARACTERISTIC,IN- CLUDING HERBICIDES,PESTICIDES,TC CONSTITUENTS,VIA DERIVED-FROM,MIX.RULE,OR ANY OTHER MEANS*****

ABOVE INFO SOURCE IS: GENERATOR KNOWLEDGE ANALYSIS X BOTH

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

18. This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:

___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable	SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)		
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:

A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil and/or debris? No: Yes, Soil: Yes, Debris: Yes, Both:

22. Specific Gravity Range: .700 to 1.500

23. Indicate the range of each: Units

Cyanides: < 50 to _____ PPM Type (free, total, amenable, etc.) TOTAL _____

Cyanides: Not Applicable to _____ Type (free, total, amenable, etc.) _____

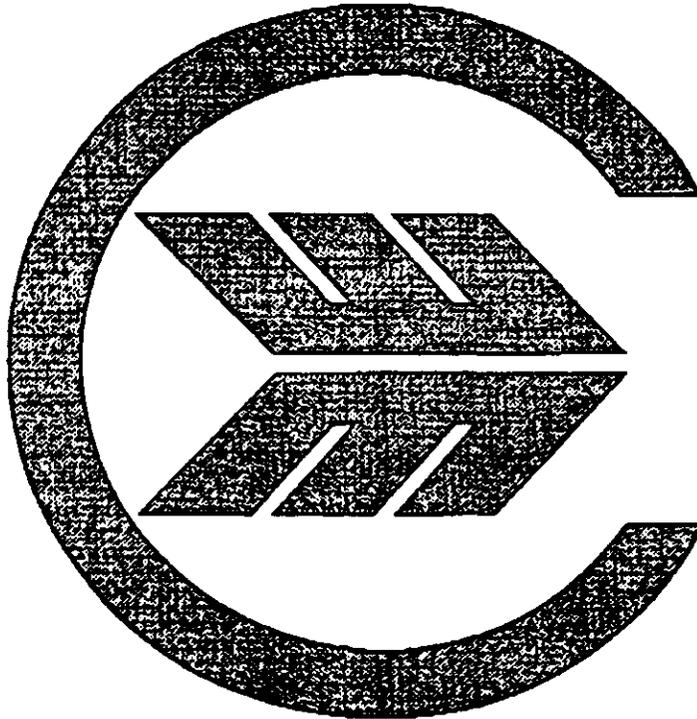
Sulfides: < 3 to _____ PPM Type _____ TOTAL _____

Optional Phenolics: < 10 to _____ PPM _____

24. Identify the waste color BROWN
 and physical appearance SOLID CHUNKS

Technical Center Analytical Laboratory

4



Special Waste Analysis Report

Chemical Waste Management - Riverdale

Sample Id:	200048606
Date Sampled:	25-OCT-91
Date Logged:	28-OCT-91
Waste Profile Number:	III AN0717
Source:	MRL
Generator Name:	TORCHLAKE SUPERFUND SITE
Generator Location:	
Waste Name:	DRUMS, CONTENTS, DEBRIS
Site Number:	

Sample Id: 200048606

Waste Profile No: III AN0717

Lab Asystant No:

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

FINGERPRINT	Result	Date
Paint Filter	PASS	10/29/91
Paint Filter Method	OBSERVED	10/29/91
pH	5.5	10/29/91
pH Meas. Method	PAPER	10/29/91
pH Method	10% SOLUTION	10/29/91
Cn Screen Method	PRUSSIAN BLUE	10/29/91
Cyanide Screen	< 50 MG/L	10/29/91
Sulfide Screen	< 3 mg/l	10/29/91
Phenol Screen	< 10 mg/l	10/29/91
Oxidizer Screen	NEGATIVE	10/29/91
Flam. Potential	NEGATIVE	10/29/91
Incidental Odor	NONE	10/29/91
Layers	SINGLEPHASE	10/29/91
Free Liquids	NO	10/29/91
Color: L1	BROWN	10/29/91
Physical State: L1	SOLID CHUNKS	10/29/91
H2O Mix: L1	LIGHTER	10/29/91
H2O Solubility: L1	PARTIALLY SOLUBLE	10/29/91
H2O Reactivity: L1	NONREACTIVE	10/29/91
Radiation Level	AT BACKGROUND	10/29/91
Hazard Class - 1	ORM E	10/29/91

COMMENTS:

No FINGERPRINT Comments

WET CHEMISTRY	Result	Date
Specific Gravity	0.8	10/30/91

COMMENTS:

No WET CHEMISTRY Comments

SPECTROSCOPY	Result	Date
Arsenic - Tc1p	<0.01 ppm	11/06/91
Barium - Tc1p	0.27 ppm	11/04/91
Cadmium - Tc1p	<0.01 ppm	11/04/91
Chromium - Tc1p	<0.02 ppm	11/04/91
Lead - Tc1p	0.22 ppm	11/04/91
Mercury - Tc1p	<0.002 ppm	11/01/91
Selenium - Tc1p	<0.01 ppm	11/04/91
Silver - Tc1p	<0.01 ppm	11/04/91

COMMENTS:

No SPECTROSCOPY Comments

Sample Id: 200048606

Waste Profile No: III AN0717

Lab Asystant No:

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

PCBS**Result****Date**

PCBS**Result****Date****COMMENTS:**

TOTAL AROCLORS LESS THAN <50 ppm

Sample Id: 200048606

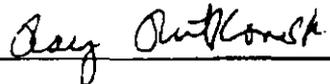
Waste Profile No: III AN0717

Lab Asystant No:

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

CERTIFICATION: Except as explicitly noted, all analytical data reported above were obtained under my
direction and supervision. For Chemical Waste Management, Inc. companies, sample preparation and
analytical methods and analytical equipment specified or approved in the facility's waste analysis plan
were used in conducting this analysis. This laboratory follows a quality assurance control program.

Report Date Nov 7, 1991



Frank Thomas
Lab Manager

TC Matrix Corrected Results Attached

TECHNICAL CENTER ANALYTICAL LABORATORY
SPECTROSCOPY

SampleID:200048606

Correction Values from Sample ID: 1.)200048561
Matrix: solid 2.)

TC MATRIX CORRECTED RESULTS

TEST	Correction Factors	RESULT (PPM)
Silver	39.70	<0.03
Barium	96.84	0.28
Cadmium	93.83	<0.01
Chromium	87.56	<0.02
Lead	85.75	0.26
Mercury	105.00	<0.002
Arsenic	100.00	<0.01
Selenium	83.00	<0.01

Signature: John WojcikDate: 11-6-91

The above results are matrix spike recovery corrected results as specified in the June 29, 1990 TC Final rule. The uncorrected results are provided on a separate report.



ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

#4A

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
708/967-6666
FAX: 708/967-6735

LABORATORY REPORT

30974

Chemical Waste Management - ENRAC
7250 W. College Dr.
Palos Heights, IL 60463

Report Date: 2/5/92
Sample received: 1/29/92

Generator: Torch Lake Project
Sample Description: Soil
Sample No: 13465 4/10717

Compounds	Concentration Found In		Adjusted Concentration	Method Detection Limit (MDL)	Regulatory Limit
	Sample	Blank			
1. Benzene	<0.25	<0.01	<0.25	0.01	0.50
2. Carbon Tetrachloride	<0.25	<0.01	<0.25	0.01	0.50
3. Chlorobenzene	<50.0	<0.01	<50.0	0.01	100.00
4. Chloroform	<3.0	<0.01	<3.0	0.01	6.00
5. o-Cresol	<100.0	<0.01	<100.0	0.03	200.00
6. m-Cresol	<100.0	<0.01	<100.0	0.03	200.00
7. p-Cresol	<100.0	<0.01	<100.0	0.03	200.00
Total Cresol	<100.0	<0.01	<100.0	0.03	200.00
8. 1,4-Dichlorobenzene	<3.75	<0.01	<3.75	0.01	7.50
9. 1,2-Dichloroethane	<0.25	<0.01	<0.25	0.01	0.50
10. 1,1-Dichloroethene	<0.35	<0.01	<0.35	0.01	0.700
11. 2,4-Dinitrotoluene	<0.07	<0.01	<0.07	0.03	0.13
12. Hexachlorobenzene	<0.07	<0.01	<0.07	0.03	0.13
13. Hexachloro-1,3-butadiene	<0.25	<0.01	<0.25	0.03	0.50
14. Hexachloroethane	<1.50	<0.01	<1.50	0.03	3.00
15. Methyl Ethyl Ketone	<100.0	<0.01	<100.0	0.01	200.00
16. Nitrobenzene	<1.00	<0.01	<1.00	0.03	2.00
17. Pentachlorophenol	<50.00	<0.01	<50.0	0.03	100.00
18. Pyridine	<2.50	<0.01	<2.50	0.03	5.00
19. Tetrachloroethylene	<0.35	<0.01	<0.35	0.01	0.70
20. Trichloroethylene	<0.25	<0.01	<0.25	0.01	0.50
21. 2,4,5-Trichlorophenol	<200.00	<0.01	<200.00	0.03	400.00
22. 2,4,6-Trichlorophenol	<1.00	<0.01	<1.00	0.03	2.00
23. Vinyl Chloride	<0.10	<0.01	<0.10	0.01	0.20

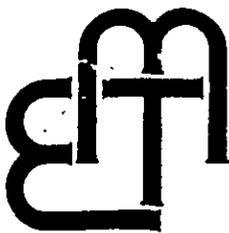
All results expressed as ppm unless otherwise indicated.

Methods performed according to SW-846, "Test methods for Evaluating Solid Waste".

Analysis performed on Extract from TCLP.

Leah E. Zue

LABORATORY DIRECTOR



ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
708/967-6666
FAX: 708/967-6735

LABORATORY REPORT

30974-A

Chemical Waste Management - ENRAC
7250 W. College Dr.
Palos Heights, IL 60463

Report Date: 2/5/92
Sample received: 1/29/92

Generator: Torch Lake Project
Sample Description: Soil
Sample No: 13465

Compounds	Concentration Found IN		Method Detection Limit (MDL)	Regulator Limit
	Sample	Blank		
1. Chlordane	<0.015	<0.00026	0.0005	0.030
2. Endrin	<0.010	<0.0001	0.0002	0.020
3. Heptachlor (and its epoxides)	<0.004	<0.00004	0.00008	0.008
4. Lindane	<0.200	<0.00003	0.0006	0.400
5. Methoxychlor	<5.000	<0.0001	0.0002	10.000
6. Toxaphene	<0.250	<0.0005	0.001	0.500
7. 2,4-D	<5.00	<0.002	0.004	10.000
8. 2,4,5-TP	<0.5	<0.002	0.004	1.00

Analysis Performed on TCLP extract because the detection limit on raw material couldn't meet the regulatory limits.

All results expressed as ppm unless otherwise indicated.

Analyses performed using "Standard Methods for the Examination of Water and Wastewater", 17th Edition.

LABORATORY DIRECTOR

Date Printed 02/05/92

Chemical Waste Management, Inc.

AN0721

WASTE PROFILE

Profile #

() Check here if this is a Recertification LOCATION OF ORIGINAL CWM of Indiana, Inc.

GENERAL INFORMATION

1. Generator Name: TORCH LAKE DRUM PRP GROUP Generator USEPA ID: MIP200000635
2. Generator Address: ROUTE M-26 Billing Address: CHEMICAL WASTE MANAGEMENT
LAKE LINDEN MI 49945 7250 WEST COLLEGE DRIVE
3. Technical Contact/Phone: GARY KRUGER 312/263-6703 PALOS HEIGHTS IL 60463
4. Alternate Billing Contact/Phone: PAT BOLGER 708/361-8400

PROPERTIES AND COMPOSITION

5. Process Generating Waste: DRUM CONSOLIDATION FROM SUPERFUND CLEAN UP SITE
6. Waste Name: DRUM CONTENTS MIXED TOGETHER

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No ()
Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): D005 D006 D007 D008
State Waste Codes: Same as USEPA Codes

8. Physical State @ 70F: A. Solid(X) Liquid() Both() Gas() B. Single Layer (X) Multilayer () C. Free liq. range ___ to ___
9A. pH: Range ___ or Not applicable () B. Strong Odor ();describe ___

10. Liquid Flash Point: < 73F () 73-99F () 100-139F () 140-199F () >= 200F (X) N.A. () Closed Cup (X) Open Cup ()

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Table with 3 columns: Constituent, Range, Units. Rows include DIRT, KILN DUST LINE, METAL SHAVINGS, BARIUM, and TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%): 117.000000

12. OTHER: PCBs if yes, concentration ___ ppm, PCBs regulated by 40 CFR 761 (). Pyrophoric () Explosive ()
Radioactive () Benzene if yes, concentration ___ ppm. Shock Sensitive () Oxidizer ()
Carcinogen () Infectious () Other ___

13. If waste subject to the land ban & meets treatment standards, check here: ___ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk solid () Bulk Liquid () Drum (X) Type/Size: 55 GALLON DRUM Other STEEL IN 85 GALLON STEEL DRUM
15. ANTICIPATED ANNUAL VOLUME: 250 Units: GALLONS Shipping Frequency: ONE TIME

SAMPLING INFORMATION

16a. Sample source (drum, lagoon, pond, tank, vat, etc.): DRUM Sample Tracking Number: 0006841
Date Sampled: Sampler's Name/Company: PATRICK BOLGER CWM ENRAC
16b. Generator's Agent Supervising Sampling: GARY KRUEGER 17. () No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature Name and Title Date

18. This is a Nonwastewater.
19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:
 ___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides
20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
				DESCRIPTION	NONE			268.41(a)	268.43(a)	268.42
1	D005		X	X			A
2	D006		X	X			A
3	D007		X	X			A
4	D008		X	X			A
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:

- A. RESTRICTED WASTE REQUIRES TREATMENT
 - B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
 - B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)
 - B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
- E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil and/or debris? No: Yes, Soil: Yes, Debris: Yes, Both:

22. Specific Gravity Range: 1.500 to 1.900

23. Indicate the range of each: Units

Cyanides: < 50 to _____ PPM Type (free, total, amenable, etc.) TOTAL _____

Cyanides: Not Applicable to _____ Type (free, total, amenable, etc.) _____

Sulfides: < 3 to _____ PPM Type _____ TOTAL _____

Optional Phenolics: < 10 to _____ PPM

24. Identify the waste color BROWN
 and physical appearance SOLID CHUNKS, <5% LIQUID AT BOTTOM

Date Printed 02/05/92

AN0721

Profile #

<p>25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION</p> <p style="text-align: center;">TOTAL</p> <p>Beryllium as Be _____ ppm</p> <p>Potassium as K _____ ppm</p> <p>Sodium as Na _____ ppm</p> <p>Bromine as Br _____ %</p> <p>Chlorine as Cl _____ %</p> <p>Fluorine as F _____ %</p> <p>Sulfur as S _____ %</p>	<p>26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)</p> <p style="text-align: center;">RANGE</p> <p>A. Heat Value (Btu/lb): _____</p> <p>B. Water: _____</p> <p>C. Viscosity (cps): _____ @ _____ F _____ 100 F _____ 150 F</p> <p>D. Ash: _____ %</p> <p>E. Settlicable solids: _____ %</p> <p>F. Vapor Pressure @ STP (mm/Hg): _____</p> <p>G. Is this waste a pumpable liquid? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>H. Can this waste be heated to improve flow? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>I. Is this waste soluble in water? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
---	--

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes No

B. Proper Shipping Name: RQ, HAZARDOUS WASTE, SOLID, N.O.S.

(BARIUM, LEAD, CADMIUM, CHROMIUM)

C. Hazard Class: ORM-II

I.D. NA9109

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): 1 Lb

28. SPECIAL HANDLING INFORMATION

PER PAT BOLGER 2/4/92 ME. CONFIRMED THAT THE D CODES FOR LEAD, CADMIUM

AND CHROME APPLY BECAUSE THE GENERATOR RAN TCLP WHICH SHOWS THAT THE

THRESHOLD LIMITS WERE EXCEEDED. THE WASTE APPEARS TO BE SOMEWHAT

VARIABLE REGARDING CONCENTRATIONS OF METALS IN THE EXTRACT.

Material Safety Data Sheets Attached

29. OTHER INFORMATION

WASTE ISN'T A DIOXIN OR SOLVENT WASTE (F020, F021, F022, F023, F026, F027, F028, OR F001, F002, F003, F004,

F005) AS DEFINED BY 40 CFR 261.31**WASTE DOES NOT CONTAIN >1000 PPM HOC'S FROM APP. III(40 CFR 266).

THERE ARE NO FREE LIQUIDS AS BY PAINT FILTER TEST. NO OTHER CODES APPLY, LISTED OR CHARACTERISTIC, IN-

CLUDING HERBICIDES, PESTICIDES, TC CONSTITUENTS, VIA DERIVED-FROM, MLX. RULE, OR ANY OTHER MEANS*****

ABOVE INFO SOURCE IS: GENERATOR KNOWLEDGE ANALYSIS X BOTH

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 02/05/92

AN0721

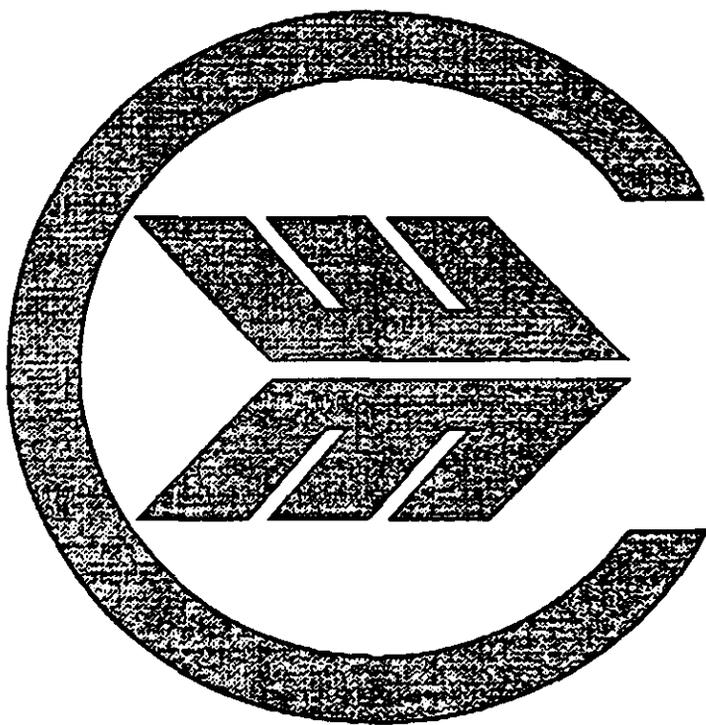
Profile #

32. OTHER HAZARDOUS CONSTITUENTS indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent			Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More			
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethylene	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2,4,5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Technical Center Analytical Laboratory

#1



Special Waste Analysis Report

Chemical Waste Management - Riverdale

Sample Id: 200048637
Date Sampled:
Date Logged: 29-OCT-91
Waste Profile Number: III AN0721 *LAKE*
Source: MRL
Generator Name: CWM/M. KUCHARSKI
Generator Location: RIVERDALE, IL
Waste Name: SET #1
Site Number:

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

FINGERPRINT**Result****Date**

pH	11.0	10/30/91
pH Meas. Method	PAPER	10/30/91
pH Method	10% SOLUTION	10/30/91
S.E.T. Ref Sample Id	200048608	10/30/91
Load Bearing Capacity	> 4.5 TONS/FT ²	10/30/91
Mix Ratio	0.20	10/30/91

COMMENTS:

S.E.T. RECIPE

100 g sample
20 g Portland cement

WET CHEMISTRY**Result****Date**

No WET CHEMISTRY Tests Requested

COMMENTS:

No WET CHEMISTRY Comments

SPECTROSCOPY**Result****Date**

Barium - TcIp	1250 ppm	11/04/91
Cadmium - TcIp	<0.03 ppm	11/06/91
Chromium - TcIp	<0.03 ppm	11/06/91
Lead - TcIp	<0.09 ppm	11/06/91

COMMENTS:

No SPECTROSCOPY Comments

Sample Id: 200048637

Waste Profile No: III AN0721

Lab Asystant No:

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

CERTIFICATION: Except as explicitly noted, all analytical data reported above were obtained under my direction and supervision. For Chemical Waste Management, Inc. companies, sample preparation and analytical methods and analytical equipment specified or approved in the facility's waste analysis plan were used in conducting this analysis. This laboratory follows a quality assurance control program.

Report Date Nov 7, 1991



Frank Thomas
Lab Manager

Frank Thomas

TC Matrix Corrected Results Attached

TECHNICAL CENTER ANALYTICAL LABORATORY
SPECTROSCOPY

48637
SampleID:200048637

Correction Values from Sample ID: 1.)200048561
Matrix: solid 2.)

TC MATRIX CORRECTED RESULTS

TEST	Correction Factors	RESULT (PPM)
Barium	96.84	1290
Cadmium	93.83	<0.03
Chromium	87.58	<0.03
Lead	85.75	<0.10

Signature: Godw Wojcik
Date: 11-6-91

The above results are matrix spike recovery corrected results as specified in the June 29, 1990 TC Final rule. The uncorrected results are provided on a separate report.

FEB 12 '92 13:39

P. 4/9

Date Printed 01/13/92

Chemical Waste Management, Inc.

AR0712

WASTE PROFILE

Profile #

() Check here if this is a Recertification LOCATION OF ORIGINAL Del Tech Center

GENERAL INFORMATION

1. Generator Name: TORCH LAKE DRUM PRP GROUP Generator USEPA ID: M19200000635
2. Generator Address: ROUTE M-26 Billing Address: CHEMICAL WASTE MGMT, INC
LAKE LINDEN MI 49845 7150 W. COLLEGE DR.
3. Technical Contact/Phone: GARY KRUGER 312/263-6703 PALOS HEIGHTS IL 60463
4. Alternate Billing Contact/Phone: PAT BOLGER 708/361-8400

PROPERTIES AND COMPOSITION

5. Process Generating Waste: LAKE WATER OVERPACKED WITH DRUMS. TORCH LAKE SUPER FUND SITE
6. Waste Name: LAKE WATER
7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes () No (X)
B. Identify ALL USEPA listed and characteristic waste code numbers (D,P,K,F,U):

State Waste Codes:

8. Physical State @ 70F: A. Solid() Liquid(X) Both() Gas() B. Single Layer (X) Multilayer () C. Free liq. range 90 to 100

9A. pH: Range 5.0 to 9.0 or Not applicable () B. Strong Odor () ; describe

10. Liquid Flash Point: < 73F () 73-99F () 100-139F () 140-199F () >= 200F (X) E.A. () Closed Cup (X) Open Cup ()

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Table with 4 columns: Constituents, Range, Units. Rows include WATER (98 to 100 %), SOLIDS(DIRT) (0 to 2 %), and TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%): 102.000000

RUSH 1/24/92 cwo

12. OTHER: PCBs if yes, concentration _____ ppm. PCBs regulated by 40 CFR 761 (). Pyrophoric () Explosive () Radioactive () Benzenes if yes, concentration _____ ppm. Shock Sensitive () Oxidizer () Carcinogen () Infectious () Other _____

13. If waste subject to the lead ben & metals treatment standards, check here: _____ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid () Bulk Liquid () Drum (X) Type/Size: 55 GALLON DRUM Other _____

15. ANTICIPATED ANNUAL VOLUME: 500 Units: GALLONS Shipping Frequency: ONE TIME

SAMPLING INFORMATION

Sample Tracking Number: 1004779

16a. Sample source (drum, lagoon, pond, tank, vat, etc.): DRUM

Date Sampled: 9/20/91 Sampler's Name/Company: PATRICK BOLGER ENRAC

16b. Generator's Agent Supervising Sampling: _____ 17. () No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All pertinent information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature

Name and Title

Date

18. This is a Nonhazardous waste.
19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:
 ___ HCs. ___ PCBs. ___ Acid. ___ Metals. ___ Cyanides
20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REP	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
				PERFORMANCE-BASED: Check as applicable	SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)		
0		DESCRIPTION	NONE	268.41(a)	268.41(a)	268.42	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

N/A

Management under the land disposal restrictions:

- A. RESTRICTED WASTE REQUIRES TREATMENT
 - B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
 - B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)
 - B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
- E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil and/or debris? No: Yes, Soil: ___ Yes, Debris: ___ Yes, Both: ___

22. Specific Gravity Range: .800 to 1.200

23. Indicate the range of each: Units

Cyanides: < 50 to _____ PPM Type (free, total, amenable, etc.) TOTAL _____

Cyanides: Not Applicable to _____ Type (free, total, amenable, etc.) _____

Sulfides: < 3 to _____ PPM Type _____ TOTAL _____

Optional Phenolics: < 10 to _____ PPM

24. Identify the waste color COLORLESS
 and physical appearance LIQUID, <5% SOLID AT BOTTOM

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION

TOTAL

Beryllium as Be	ppb
Potassium as K	ppm
Sodium as Na	ppm
Bromine as Br	ppm
Chlorine as Cl	ppm
Fluorine as F	ppm
Sulfur as S	ppm

26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)

RANGE

- A. Heat Value (Btu/lb): _____
- B. Water: _____
- C. Viscosity (cP): _____ P _____ F _____ 150 F
- D. Ash: _____
- E. Settleable solids: _____
- F. Vapor Pressure @ 20F (mm/Hg): _____
- G. Is this waste a pumpable liquid? Yes No
- H. Can this waste be heated to improve flow? Yes No
- I. Is this waste soluble in water? Yes No
- J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes No

27. TRANSPORTATION INFORMATION

- A. Is this a DOT Hazardous Material? Yes No X
- B. Proper Shipping Name: NON-REGULATED MATERIAL

C. Hazard Class: Non-Regulated Mat.

I.D.

D. CERCLA Reportable Quantity (RQ) and units (lb, kg): _____

28. SPECIAL HANDLING INFORMATION

Handwritten initials

Material Safety Data Sheets Attached

29. OTHER INFORMATION

Handwritten initials

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

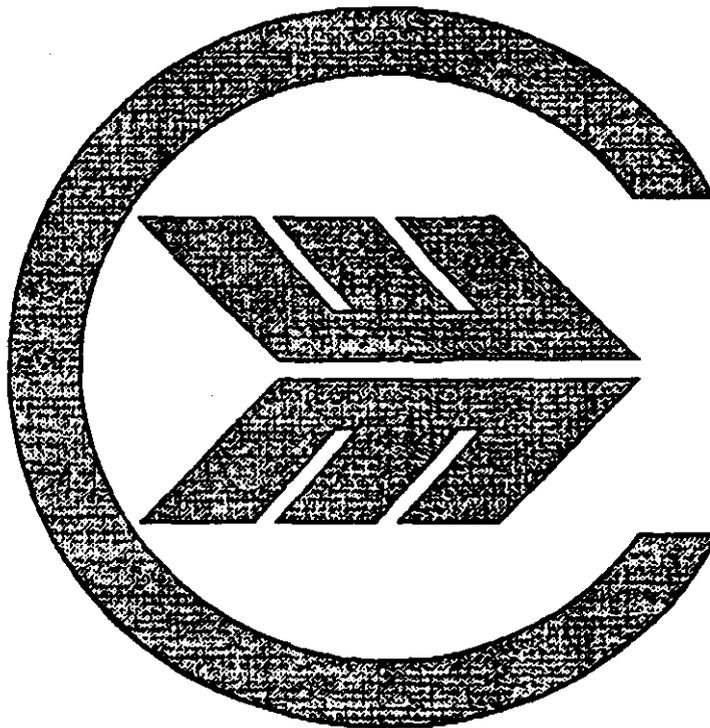
Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

32. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information:			Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	TCA or TOTAL Use units: ppm, mg/l or %
	Check only ONE for each constituent	Less Than	Regulated Level				Equal or More
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethylene	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	1.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2,4,5-TF Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Technical Center Analytical Laboratory

#2



Special Waste Analysis Report

Chemical Waste Management - Riverdale

Sample Id:	200048607
Date Sampled:	25-OCT-91
Date Logged:	28-OCT-91
Waste Profile Number:	III AN0722
Source:	MRL
Generator Name:	TORCHLAKE SUPERFUND SITE
Generator Location:	
Waste Name:	LAKE WATER
Site Number:	

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

FINGERPRINT	Result	Date
Paint Filter	FAIL	10/29/91
Paint Filter Method	OBSERVED	10/29/91
pH	6.5	10/29/91
pH Meas. Method	PAPER	10/29/91
pH Method	AS RECD	10/29/91
Cn Screen Method	PRUSSIAN BLUE	10/29/91
Cyanide Screen	< 50 MG/L	10/29/91
Sulfide Screen	< 3 mg/l	10/29/91
Phenol Screen	< 10 mg/l	10/29/91
Oxidizer Screen	NEGATIVE	10/29/91
Flam. Potential	NEGATIVE	10/29/91
Incidental Odor	NONE	10/29/91
Layers	SINGLEPHASE	10/29/91
Free Liquids	YES	10/29/91
Percent Free Liquids	96	10/29/91
Color: L1	COLORLESS	10/29/91
Physical State: L1	LIQUID <5% SOLID AT BOTTOM	10/29/91
H2O Solubility: L1	SOLUBLE	10/29/91
H2O Reactivity: L1	NONREACTIVE	10/29/91
Turbidity: L1	CLEAR	10/29/91
Viscosity: L1	LOW	10/29/91
Radiation Level	AT BACKGROUND	10/29/91
Hazard Class - 1	ORM E	10/29/91

COMMENTS:

No FINGERPRINT Comments

WET CHEMISTRY	Result	Date
Total Residue @ 105 C	< .5 percent	10/30/91
Specific Gravity	1.0	10/30/91
Chloride, As Cl (Total)	<.5 percent	11/01/91

COMMENTS:

No WET CHEMISTRY Comments

SPECTROSCOPY	Result	Date
Arsenic - Tc1p	<0.01 ppm	11/04/91
Barium - Tc1p	0.23 ppm	11/04/91
Cadmium - Tc1p	<0.01 ppm	11/04/91
Chromium - Tc1p	<0.02 ppm	11/04/91
Copper - Tc1p	<0.02 ppm	11/04/91

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

**SPECTROSCOPY
(continued):**

	Result	Date
Lead - Tc1p	<0.05 ppm	11/04/91
Mercury - Tc1p	<0.002 ppm	11/01/91
Nickel - Tc1p	<0.03 ppm	11/04/91
Selenium - Tc1p	<0.01 ppm	11/04/91
Silver - Tc1p	<0.01 ppm	11/04/91
Zinc - Tc1p	0.09 ppm	11/04/91

COMMENTS:

No SPECTROSCOPY Comments

AQUEOUS PCBS

Result	Date
Total Arochlors is Less Than 5 mg/kg	10/31/91

COMMENTS:

No AQUEOUS PCBS Comments

SOLVENT SCREEN

	Result	PQL	Date
Dichlorodifluoromethane	0 - BQL	.1 Wgt %	11/04/91
Trichlorofluoromethane	0 - BQL	.1 Wgt %	11/04/91
Ether	0 - BQL	.1 Wgt %	11/04/91
Methanol	0 - BQL	.1 Wgt %	11/04/91
1,1,2-Trichloro-1,2,2-Trifluoroethane	0 - BQL	.1 Wgt %	11/04/91
Ethanol	0 - BQL	.1 Wgt %	11/04/91
Acetone	0 - BQL	.1 Wgt %	11/04/91
Isopropanol	0 - BQL	.1 Wgt %	11/04/91
Methylene Chloride	0 - BQL	.1 Wgt %	11/04/91
T-1,2-Dichloroethylene	0 - BQL	.1 Wgt %	11/04/91
Acetonitrile	0 - BQL	.1 Wgt %	11/04/91
Ethyl Acetate	0 - BQL	.1 Wgt %	11/04/91
1,1,1-Trichloroethane	0 - BQL	.1 Wgt %	11/04/91
Methyl Ethyl Ketone	0 - BQL	.1 Wgt %	11/04/91
Carbon Tetrachloride	0 - BQL	.1 Wgt %	11/04/91
Chloroform	0 - BQL	.1 Wgt %	11/04/91
N-Propanol	0 - BQL	.1 Wgt %	11/04/91
Benzene	0 - BQL	.1 Wgt %	11/04/91
1,2-Dichloroethane	0 - BQL	.1 Wgt %	11/04/91
Isobutanol	0 - BQL	.1 Wgt %	11/04/91
Trichloroethylene	0 - BQL	.1 Wgt %	11/04/91
N-Butanol	0 - BQL	.1 Wgt %	11/04/91
1,4-Dioxane	0 - BQL	.1 Wgt %	11/04/91
Propyl Acetate	0 - BQL	.1 Wgt %	11/04/91
Toluene	0 - BQL	.1 Wgt %	11/04/91
2-Ethoxyethanol	0 - BQL	.1 Wgt %	11/04/91
Methyl Isobutyl Ketone	0 - BQL	.1 Wgt %	11/04/91
Tetrachloroethylene	0 - BQL	.1 Wgt %	11/04/91
Butyl Acetate	0 - BQL	.1 Wgt %	11/04/91
Chlorobenzene	0 - BQL	.1 Wgt %	11/04/91
Ethylbenzene	0 - BQL	.1 Wgt %	11/04/91



ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
708/967-6666
FAX: 708/967-6735

LABORATORY REPORT

30771-A

Chemical Waste Management
7250 W. College Drive
Palos Heights, IL 60463

Project Name: Torch Lake Project

Report Date: 2/3/92
Sample Received: 1/29/92

Sample Description: Waste Water
Sample No.: 13454

Compounds	Concentration Found In		Adjusted Concentration	Method Detection Limit (MDL)	Regulatory Limit
	Sample	Blank			
1. Benzene	<0.25	<0.01	<0.25	0.01	0.50
2. Carbon Tetrachloride	<0.25	<0.01	<0.25	0.01	0.50
3. Chlorobenzene	<50.0	<0.01	<50.0	0.01	100.00
4. Chloroform	<3.0	<0.01	<3.0	0.01	6.00
5. o-Cresol	<100.0	<0.01	<100.0	0.01	200.00
6. m-Cresol	<100.0	<0.01	<100.0	0.01	200.00
7. p-Cresol	<100.0	<0.01	<100.0	0.01	200.00
Total Cresol	<100.0	<0.01	<100.0	0.01	200.00
8. 1,4-Dichlorobenzene	<3.75	<0.01	<3.75	0.01	7.50
9. 1,2-Dichloroethane	<0.25	<0.01	<0.25	0.01	0.50
10. 1,1-Dichloroethene	<0.35	<0.01	<0.35	0.01	0.700
11. 2,4-Dinitrotoluene	<0.07	<0.01	<0.07	0.01	0.13
12. Hexachlorobenzene	<0.07	<0.01	<0.07	0.01	0.13
13. Hexachloro-1,3-butadiene	<0.25	<0.01	<0.25	0.01	0.50
14. Hexachloroethane	<1.50	<0.01	<1.50	0.01	3.00
15. Methyl Ethyl Ketone	<100.0	<0.01	<100.0	0.01	200.00
16. Nitrobenzene	<1.00	<0.01	<1.00	0.01	2.00
17. Pentachlorophenol	<50.00	<0.01	<50.0	0.01	100.00
18. Pyridine	<2.50	<0.01	<2.50	0.01	5.00
19. Tetrachloroethylene	<0.35	<0.01	<0.35	0.01	0.70
20. Trichloroethylene	<0.25	<0.01	<0.25	0.01	0.50
21. 2,4,5-Trichlorophenol	<200.00	<0.01	<200.00	0.01	400.00
22. 2,4,6-Trichlorophenol	<1.00	<0.01	<1.00	0.01	2.00
23. Vinyl Chloride	<0.10	<0.01	<0.10	0.01	0.20

All results expressed as ppm unless otherwise indicated.
Methods performed according to SW-846, "Test methods for Evaluating Solid Waste".

Analysis performed on Extract from TCLP.

Leslie E. Zure

LABORATORY DIRECTOR



ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
708/967-6666
FAX: 708/967-6735

LABORATORY REPORT

30771-B

Chemical Waste Management
7250 W. College Drive
Palos Heights, IL 60463

Project Name: Torch Lake Project

Report Date: 2/3/92
Sample Received: 1/29/92

Sample Description: Waste Water
Sample No.: 13454

Compounds	Concentration Found IN		Method Detection Limit (MDL)	Regulatory Limit
	Sample	Blank		
1. Chlordane	<0.015	<0.00026	0.00026	0.030
2. Endrin	<0.010	<0.0001	0.0001	0.020
3. Heptachlor (and its epoxides)	<0.004	<0.00004	0.00004	0.008
4. Lindane	<0.200	<0.00003	0.00003	0.400
5. Methoxychlor	<5.000	<0.0001	0.0001	10.000
6. Toxaphene	<0.250	<0.0005	0.0005	0.500
7. 2,4-D	<5.00	<0.002	0.002	10.000
8. 2,4,5-TP	<0.5	<0.002	0.002	1.00

All results expressed as ppm unless otherwise indicated.

Analyses performed using "Standard Methods for the Examination of Water and Wastewater", 17th Edition.

Leslie E. Zuber

LABORATORY DIRECTOR

Date Printed 02/02/92

Chemical Waste Management, Inc.

02/11/92

WASTE PROFILE

Profile 0

() Check here if this is a Recertification LOCATION OF ORIGINAL D.R.C.O. - Colorado

GENERAL INFORMATION

1. Generator Name: TORCHLAKE SUPERFUND SITE Generator USEPA ID: APPI
2. Generator Address: LAKE LITWEN Billing Address: CHEMICAL WASTE MGMT ENRAC
LAKELITWEN MI 49930 () Same 7250 COLLEGE DRIVE
3. Technical Contact/Phone: GARY KROGER 312/263-6702 PALOS HEIGHTS IL 60443
4. Alternate Contact/Phone: Billing Contact/Phone:

PROPERTIES AND COMPOSITION

5. Process Generating Waste: CLEAN UP TORCH LAKE SUPERFUND SITE

6. Waste Name: LIQUID W/RAES IN DRUM

In this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No ()
Identify ALL USEPA listed and characteristic waste code numbers (D,F,X,P,U): F003 F004

State Waste Codes:

8. Physical State @ 70F: A. Solid () Liquid (X) Both () Gas () B. Single Layer () Multilayer (X) C. Free liq. range to 100F

9A. pH: Range 5.0 to 9.0 or Not applicable () B. Strong Odor (); describe

10. Liquid Flash Point: () 73F () 73-99F () 100-139F () 140-199F () >= 200F (X) N.A. () Closed Cap (X) Open Cap ()

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Table with 3 columns: Constituent, Range, Units. Rows include LIQUID (90 to 100 %), RAGS & DEBRIS (10 to 30 %), NO METALS, 90% OIL 10% DEBRIS, OIL, 90% OIL 10% OIL, TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):

12. OTHER: PCBs if yes, concentration 365 ppm, PCBs regulated by 40 CFR 761 (), Pyrophoric (), Explosive (), Radioactive (), Benzene if yes, concentration ppm, Shock Sensitive (), Oxidizer (), Carcinogen (), Infectious (), Other

13. If waste subject to the land ban & needs treatment standards, check here: & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid () Bulk Liquid () Drum (X) Type/Size: 55 GALLON DRUM Other

15. ANTICIPATED ANNUAL VOLUME: 2 Units: GALLONS Shipping Frequency: ONE TIME

SAMPLING INFORMATION

Sample Tracking Number: 0009916

16a. Sample source (drum, togeon, pond, tank, vat, etc.):

Date Sampled: Sampler's Name/Company:

16b. Generator's Agent Supervising Sampling: 17. (X) No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature

Name and Title

Date

Date Printed 02/07/92

MD723

Profile 9

18. This is a Nonhazardous.

19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:

___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none	C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
			PERFORMANCE-BASED: Check as applicable:	SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)		
0		DESCRIPTION	268.41(a)	268.43(a)	268.42	
1	F003		X	X	X	A
2	F004		X	X	X	A
3						
4						
5						
6						
7						
8						
9						
10						

Management under the land disposal restrictions:

A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. In this waste is soil and/or debris? No: Yes, Soil: Yes, Debris: Yes, Both:

22. Specific Gravity Range: 500 to 2,900

23. Indicate the range of each: _____ Units

Cyanides: None to _____ Type (free, total, recoverable, etc.) _____

Cyanides: None to _____ Type (free, total, recoverable, etc.) _____

Sulfides: None to _____ Type _____

Optional Phenolics: None to _____

24. Identify the waste color VARIES

and physical appearance _____

Date Printed 02/07/92

00723

Profile 0

32. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent:			Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More			
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4-Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethylene	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor. & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Heptachlor	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorobenzol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxobenz	X	0.5 mg/l		D015		
2,4,5-TP Silyl	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorobenzol	X	400.0 mg/l		D041		
2,4,6-Trichlorobenzol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION		26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)	
TOTAL		RANGE	
Beryllium as Be	_____ ppm	A. Heat Value (Btu/lb):	_____ - _____
Potassium as K	_____ ppm	B. Water:	_____
Sodium as Na	_____ ppm	C. Viscosity (cps):	_____ @ _____ F - 100 F - 150 F
Bromine as Br	_____ %	D. Ash:	_____ %
Chlorine as Cl	_____ %	E. Settleable solids:	_____ %
Fluorine as F	_____ %	F. Vapor Pressure @ STP (mm/Hg):	_____
Sulfur as S	_____ %	G. Is this waste a pumpable liquid? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
		H. Can this waste be heated to improve flow? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
		I. Is this waste soluble in water? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
		J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes No

B. Proper Shipping Name: RG HAZARDOUS WASTE LIMITED H.O.S.
(POLYCHLORINATED BIPHENYL)
(CONTAINS F003 & F005)

C. Hazard Class: DM-F I.D. WG102

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): 1 lb

28. SPECIAL HANDLING INFORMATION

4-PCR'S
END MUST BE NOTIFIED PRIOR TO SCHEDULING

Material Safety Data Sheets Attached

29. OTHER INFORMATION

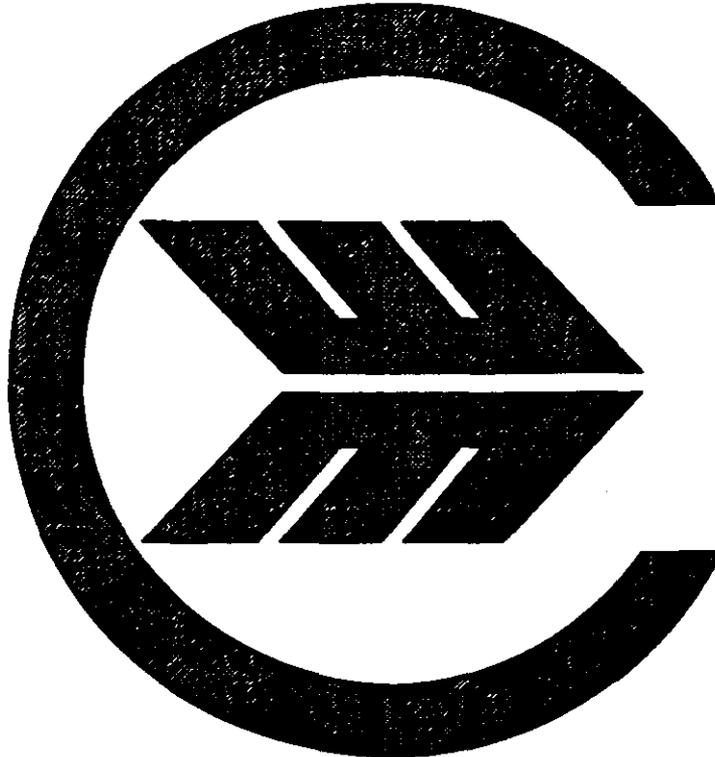
RECEIVED 1/27/92

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Technical Center Analytical Laboratory

#3



Special Waste Analysis Report

Chemical Waste Management - Riverdale

Sample Id:	200048609
Date Sampled:	25-OCT-91
Date Logged:	28-OCT-91
Waste Profile Number:	III AN0723
Source:	III
Generator Name:	TORCHLAKE SUPERFUND SITE
Generator Location:	
Waste Name:	LIQUID WITH RAGS IN DRUM
Site Number:	

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

FINGERPRINT**Result****Date**

No FINGERPRINT Tests Requested

COMMENTS:No FINGERPRINT Comments

WET CHEMISTRY**Result****Date**

No WET CHEMISTRY Tests Requested

COMMENTS:No WET CHEMISTRY Comments

SPECTROSCOPY**Result****Date**

No SPECTROSCOPY Tests Requested

COMMENTS:No SPECTROSCOPY Comments

ORGANIC PCBS**Result****Date**

AROCHLOR 1248

346 ppm

01/08/92

COMMENTS:

No ORGANIC PCBS Comments

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

CERTIFICATION: Except as explicitly noted, all analytical data reported above were obtained under my
direction and supervision. For Chemical Waste Management, Inc. companies, sample preparation and
analytical methods and analytical equipment specified or approved in the facility's waste analysis plan
were used in conducting this analysis. This laboratory follows a quality assurance control program.

Report Date Jan 8, 1992

Ray Rutkowski

Ray Rutkowski

Lab Manager

Midwest Region Laboratory

#3A



Special Waste Analysis Report

Chemical Waste Management - Riverdale

Sample Id:	200050961
Date Sampled:	25-OCT-91
Date Logged:	07-JAN-92
Waste Profile Number:	III AN0723
Source:	IIR
Generator Name:	TORCHLAKE SUPERFOND SITE
Generator Location:	
Waste Name:	LIQUID WITH RAGS IN DRUM
Site Number:	

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

FINGERPRINT	Result	Date
pH	6.0	10/31/91
pH Meas. Method	PAPER	10/31/91
pH Method	10% SOLUTION	10/31/91
Cn Screen Method	PRUSSIAN BLUE	10/31/91
Cyanide Screen	< 50 MG/L	10/31/91
Sulfide Screen	< 3 mg/l	10/31/91
Phenol Screen	< 10 mg/l	10/31/91
Oxidizer Screen	NEGATIVE	10/31/91
Flam. Potential	NEGATIVE	10/31/91
Incidental Odor	NONE	10/31/91
Layers	SINGLEPHASE	10/31/91
Free Liquids	YES	10/31/91
Percent Free Liquids	100	10/31/91
Color: L1	BROWN	10/31/91
Physical State: L1	LIQUID	10/31/91
H2O Mix: L1	LIGHTER	10/31/91
H2O Solubility: L1	INSOLUBLE	10/31/91
H2O Reactivity: L1	NONREACTIVE	10/31/91
Turbidity: L1	OPAQUE	10/31/91
Viscosity: L1	LOW	10/31/91
Radiation Level	AT BACKGROUND	10/31/91
Hazard Class - 1	ORM E	10/31/91

COMMENTS:

No FINGERPRINT Comments

WET CHEMISTRY	Result	Date
Ash Content, On Ignition	< .5 percent	10/30/91
Specific Gravity	0.9	10/30/91
Chloride, As Cl (Total)	<.5 percent	11/01/91
Heating Value	18400 btu/lb	10/30/91
Flash Point - Closed Cup	>212 fahrenheit	10/30/91

COMMENTS:

No WET CHEMISTRY Comments

SPECTROSCOPY	Result	Date
No SPECTROSCOPY Tests Requested		

COMMENTS:

No SPECTROSCOPY Comments

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

ORGANIC PCBS	Result	Date
AROCHLOR 1248	365 ppm	11/04/91

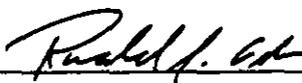
COMMENTS:

No ORGANIC PCBS Comments

This Report is intended for the use and benefit of Waste Management and its companies.
No representation concerning significance of the reported data is made to any other person
or entity.

CERTIFICATION: Except as explicitly noted, all analytical data reported above were obtained under my
direction and supervision. For Chemical Waste Management, Inc. companies, sample preparation and
analytical methods and analytical equipment specified or approved in the facility's waste analysis plan
were used in conducting this analysis. This laboratory follows a quality assurance control program.

Report Date Nov 5, 1991



Frank Thomas
Lab Manager

RONALD J. OSBORN

APPENDIX F

MANIFESTS



PLEASE PRINT OR TYPE

(Form designed for use on elite (12-pitch) typewriter)

Form Approved OMB No 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. **MI7-2000-00635** Manifest Document No. **00003**

2. Page 1 of 1 Information in the shaded areas is not required by Federal law, but items B, F, H and I are required by State law.

3. Generator's Name and Mailing Address
Torch Lake Drum PRP Group % 101 Red Jacket Rd Columet MI

A. State Manifest Document Number
INA 0624297

4. Generator's Phone **(906) 337 0204 44913**

B. State Generator's ID

5. Transporter 1 Company Name **Chemical Waste Mgmt** 6. Use EPA ID Number **ILD099202681**

C. State Transporter's ID

7. Transporter 2 Company Name **Chemical Waste Mgmt J.D.A.** 8. Use EPA ID Number **ILD099202681**

D. Transporter's Phone **219-423-1655**

9. Designated Facility Name and Site Address
CWM of Indiana, Inc. 4636 Adams Center Road Ft Wayne, IN 46806 10. Use EPA ID Number **IND0789-1-1-4-6**

E. State Transporter's ID **0075**
F. Facility's Phone **219-447-5595**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers		13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
	No.	Type			
a. NON-REGULATED	00	1 CM	0.0025	Y	N/A
b.	.	.	.	.	.
c.	.	.	.	.	.
d.	.	.	.	.	.

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Profile # AN0717
(Roll off Box) D-81 Landfill
*** signed on behalf of UOP Inc. a member of group of respondents named in EPA CERCLA 106 order relating to Torch Lake Drum site.**

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name **John I. Haataja** Signature **John I. Haataja** * see above Date **02/1/92**

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name **Virgil Adkins** Signature **Virgil Adkins** Date **02/1/92**

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name _____ Signature _____ Date _____

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted Item 19.
Printed/Typed Name _____ Signature _____ Date _____

National Response Center at 800/424-8802 or 202/426-2722

INA 0624297

CHEMICAL WASTE MANAGEMENT, INC.
DISPATCH/SHIPPING INSTRUCTIONS

DRIVER: 24008

TRUCK: 241008

TRAILER: 246011 09 BOBKO ROLLOFF

GENERATOR:

CWM ENRAC MISCELLANEOUS WORK
7300 W. COLLEGE DR.
PALOS HTS, IL 60473
FED EPA 000000000000
PHONE (708) 361-8400
CONTACT ANYONE

DISPOSAL SITE:

CWM ENRAC MIDWEST
7300 COLLEGE DRIVE
PALOS HEIGHTS, IL 60463
FED EPA ILD000000000

QUANTITY / TYPE	CODE	DESCRIPTION
HOURLY	ENRYDENRE *NONE*	MISCELLANEOUS WORK FOR ENRAC HUBBELL, MI EXPIRES 12/31/92

DRIVER'S RECTIONS

SCHEDULED PICKUP DATE 02/10/92 0800
SCHEDULED DELIVERY DT 02/10/92 0800

MANIFEST NO.:
W/O #:

INA 0624297

LOADING DEMURRAGE TIME SUMMARY	
ARRIVE CUST	<i>11:00</i>
START LOAD	
END LOAD	<i>13:30</i>
TOTAL TIME	<i>2 1/2</i>

COMMENTS
BOX IN - #: <i>---</i>
BOX OUT - #: <i>249051</i>
WASHOUT YES / <i>NO</i>
BRING <i>0</i> / 1 / 2 / 3 LINERS

UNLOADING DEMURRAGE TIME SUMMARY	
ARRIVE SITE	
START UNLOAD	
END UNLOAD	
TOTAL TIME	

DISPATCHED: 02/07/92

CUSTOMER SIGNATURE: *[Signature]*
SITE SIGNATURE: *[Signature]*

SERVICE PROVIDED BY:

CHEMICAL WASTE MGMT - FT WAYNE
2701 S COLISEUM BLVD, STE 1016
FORT WAYNE, IN 46803
FED EPA ILD099202681
PHONE: (219) 423-1656

DATE COMPLETED *02/11/92*

DRIVER SIGNATURE *[Signature]*



PLEASE PRINT OR TYPE

(Form designed for use on this (12 inch) typewriter)

Form Approved OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

MI-P-2000000635

Manifest Document No.

00004

2. Page 1

1 of 1

Information in the shaded areas is not required by Federal law, but items D, F, H and I are required by State law.

3. Generator's Name and Mailing Address

Torch Lake Drum PRR Group % 101 Reed Jacket Rd
Calumet MI

A. State Manifest Document Number

INA 0596134

4. Generator's Phone (906) 337 0204 44913

5. Transporter 1 Company Name

Chemical Waste Mgmt

6. Use EPA ID Number

IL-D-099-202681

B. State Generator's ID

C. State Transporter's ID

0075

D. Transporter's Phone

708-396-650

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address

CWM of Indiana, Inc
4636 Adams Center Rd.
Ft Wayne, IN 46806

10. Use EPA ID Number

IND-0789-1-1-46

G. State Facility's ID

H. Facility's Phone

219 447 5585

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

Hazardous waste solid ORME (D005)

12. Containers

No.

Type

13. Total Quantity

14. Unit Wt/Vol.

1. Waste No.

4 D M 02000 P

D005

J. Additional Descriptions for Materials Listed Above

* Signed on behalf of UOT Inc, a member of the group of respondents named in the EPA CERCLA 106 order relating to Torch Lake Drum Site

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Profile # AN0721 (D005 D006 D007, D008) for stabilization at Adams Center

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

JOHN T. HAATAJA

Signature

J. Haataja * above

Month Day Year 01 31 92

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

JAMES J BLAKE

Signature

James J Blake

Month Day Year 01 31 92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted item 19.

Printed/Typed Name

Signature

Month Day Year

In case of a spill call the Indiana Office of Environmental response at 317/241-4336 (day or night) and the National Response Center at 800/424-8802 or 202/426-2671

Generator Name: Torch Lake PRP Group

Manifest Doc. No.:

CWM Profile Number: AN 0721 (4 drums stabilization)

State Manifest No.: INA 0596134

1. Is this waste a non-wastewater or a wastewater? (See 40 CFR 268.2) Check ONE: Non-Wastewater Wastewater
2. If this waste is subject to any California List restrictions enter the letter from below (either A, B1, or B2) next to each restriction that is applicable:
 _____ HOCs, _____ PCBs, _____ Acid, _____ Metals, _____ Cyanides.
3. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Also check which treatment standards apply. Spent solvent and California List treatment standards are listed on the back of this form. If F039, multi-source leachate applies, those standards must be attached by the generator.

REF #	4. US EPA HAZARDOUS WASTE CODE(S)	5. SUBCATEGORY		6. APPLICABLE TREATMENT STANDARDS			7. HOW MUST THE WASTE BE MANAGED ENTER THE LETTER FROM BELOW
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE		6.a - PERFORMANCE-BASED: CHECK AS APPLICABLE		6.b - SPECIFIED TECHNOLOGY: IF APPLICABLE ENTER THE 40 CFR 268.42-TABLE 1 TREATMENT CODE(S)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42(a)	
1	D005		X	X			A
2	D006		X	X			A
3	D007		X	X			A
4	D008		X	X			A
5							
6							
7							
8							
9							
10							

To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (CWM-2001-B) and check here:

HOW MUST THE WASTE BE MANAGED? In column 7 above, enter the letter (A, B1, B2, B3, C, or D) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B2, B3, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."
- B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION - FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR Part 264 Subpart O or Part 265 Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 7 above.
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I have determined that this waste meets all applicable treatment standards set forth in 40 CFR Part 268 Subpart D, and all applicable prohibition levels set forth in Section 268.32 or RCRA Section 3004(d), and therefore, can be land disposed without further treatment. A copy of all applicable treatment standards and specified treatment methods is maintained at the treatment, storage and disposal facility named above. "I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth on 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting false certification, including the possibility of a fine and imprisonment."

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.
 signed on behalf of UOP INC, a member of group
 Signature: [Signature] of respondent named in EPA CERCLA Title 106 Date 2/10/92
 order relating to TORCH LAKE DRUM 5180.



FOR DNR USE ONLY

Please print or type. Form designed for use on elite (12-pitch) typewriter.

Form Approved. OMB No. 2050-0039. Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. MIP200000635	Manifest Document No. 90101012	2. Page 1 1 of 1	Information in the shaded area is not required by Federal law	
Generator's Name and Mailing Address Torch Lake Drum PRP Group % 101 Red Jacket Rd. Calumet MI 49713			A. State Manifest Document Number WI J196736		B. State Generator's ID	
4. Generator's Phone (906) 337 0204		6. US EPA ID Number		C. State Transporter's ID		D. Transporter's Phone
5. Transporter 1 Company Name Chemical Waste Mgmt.		8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone
7. Transporter 2 Company Name		10. US EPA ID Number WID 003 967 148		G. State Facility's ID		H. Facility's Phone 414-255-6655
9. Designated Facility Name and Site Address CWM Controlled Waste W 124 N 9451 Boundary Road Menomonie Falls, WI 53051		11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No.	13. Total Quantity	14. Unit w/vol
a. Non Regulated Material				908 DM	1600	g
b.						
c.						
d.						
J. Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above		
Special Handling Instructions and Additional Information (AM0722) Profile # (lake water) *Signed on behalf of DOT2 a member of the group of respondents named in the EPA C. A 106 order relating to Torch Lake						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations and according to the requirements of the Wisconsin Department of Natural Resources. If I am a large quantity generator, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; Drum size						
OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name & Position Title JOHN T. AARATA		Signature <i>[Signature]</i>		Date 01/31/92		
17. TRANSPORTER 1 Acknowledgement of Receipt of Materials						
Printed/Typed Name & Position Title JAMES J BLAKE DRIVER		Signature <i>[Signature]</i>		Date 01/31/92		
18. TRANSPORTER 2 Acknowledgement of Receipt of Materials						
Printed/Typed Name & Position Title		Signature		Date		
19. Discrepancy Indication Space						
20. FACILITY OWNER OR OPERATOR: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						
Printed/Typed Name & Position Title		Signature		Date		

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

Generator Name: Torch Lake PRP Group Manifest Doc. No.:

CWM Profile Number: AN0723 (2 drums incinerated) State Manifest No.: MI 221525

1. Is this waste a non-wastewater or a wastewater? (See 40 CFR 268.2) Check ONE: Non-Wastewater Wastewater
2. If this waste is subject to any California List restrictions enter the letter from below (either A, B1, or B2) next to each restriction that is applicable:
 HOCs, PCBs, Acid, Metals, Cyanides.
3. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Also check which treatment standards apply. Spent solvent and California List treatment standards are listed on the back of this form. If F039, multi-source leachate applies, those standards must be attached by the generator.

R E P #	4. US EPA HAZARDOUS WASTE CODE(S)	5. SUBCATEGORY		6. APPLICABLE TREATMENT STANDARDS			7. HOW MUST THE WASTE BE MANAGED ENTER THE LETTER FROM BELOW
		ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE		6.a - PERFORMANCE-BASED: CHECK AS APPLICABLE		6.b - SPECIFIED TECHNOLOGY: IF APPLICABLE ENTER THE 40 CFR 268.42-TABLE 1 TREATMENT CODE(S)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42(a)	
1	F003		X	X	X		A
2	F004		X	X	X		A
3							
4							
5							
6							
7							
8							
9							
10							

To list additional USEPA waste code(s) and subcategory(s), use the supplemental sheet provided (CWM-2001-B) and check here:

HOW MUST THE WASTE BE MANAGED? In column 7 above, enter the letter (A, B1, B2, B3, C, or D) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B2, B3, or D, you are making the appropriate certification as provided below.

- A. RESTRICTED WASTE REQUIRES TREATMENT**
 This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).
- B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."
- B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)**
 "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- B.3 GOOD FAITH ANALYTICAL CERTIFICATION - FOR INCINERATED ORGANICS**
 "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR Part 264 Subpart O or Part 265 Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- C. RESTRICTED WASTE SUBJECT TO A VARIANCE**
 This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 7 above.
- D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT**
 "I have determined that this waste meets all applicable treatment standards set forth in 40 CFR Part 268 Subpart D, and all applicable prohibition levels set forth in Section 268.32 or RCRA Section 3004(d), and therefore, can be land disposed without further treatment. A copy of all applicable treatment standards and specified treatment methods is maintained at the treatment, storage and disposal facility named above. "I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth on 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting false certification, including the possibility of a fine and imprisonment."

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.
 Signature: John S. Astorja Signed on behalf of UOP Inc., a member of group of respondents named in EPA CERCLA order relating to Torch Lake Drum Site. Date: 2/10/92

APPENDIX G

ENVIRONMENTAL & MARINE SERVICES CONTRACT

GENERAL CONTRACT

This General Contract is made and entered into on this 2nd day of August, 1991, by and between GERAGHTY & MILLER, INC., a Delaware corporation, hereinafter referred to as "Consultant", and Environmental & Marine Services, Inc., hereinafter referred to as "Contractor", for services for the respondents to the EPA's Administrative Order on Consent, hereinafter referred to as "Client", at the site known as the Torch Lake Superfund Site, Houghton County, Michigan, hereinafter referred to as "Property".

In consideration of the covenants and agreements herein contained, it is mutually agreed as follows:

1. *The Contract Documents*

The Contract between the Consultant and the Contractor consists of this signed "General Contract" which includes and incorporates the following:

- A. Exhibit A - "Specifications for Services"
- B. Exhibit B - "Schedule of Charges for Services"

In the event of any conflict between this General Contract and any correspondence or other documents exchanged by the parties, this General Contract shall control.

2. *Work*

Contractor will, as an independent contractor, furnish all necessary supervision, labor, materials and equipment and shall perform the services as described in Exhibit A, which shall hereinafter be referred to as "Work".

3. *Term of Contract*

The Contractor shall provide service in accordance with Exhibit A also described herein as the "Work". The Work shall commence on August 12, 1991 and be completed by September 13, 1991. This period of time shall be the "Contract Time." The consultant reserves the right to extend the Contract Time if necessary and excusable delays, as determined solely by the Consultant, occur in the completion of the Work to be performed by the Contractor.

4. *Contract Price and Payment*

- A. Consultant shall pay to Contractor, as compensation for the Work, the amounts agreed upon in Exhibit B. Payments or credits for changes in the Work, as provided in Paragraph 2 hereof shall be in such amount as the parties shall agree upon in writing. Within ten (10) days following Consultant's receipt of the

applicable progress or final payment from Client delivered to Consultant, or within 120 days whichever comes earlier, Consultant shall pay the full amount of such invoice; *provided, however*, that if Consultant objects to any portion of an invoice, Consultant shall notify Contractor of objection and the grounds therefor within 30 days of the date the invoice is received, and the parties immediately shall make every effort to settle the disputed portion of the invoice. Consultant, in any event, shall pay every portion of the invoice that is not in dispute within the period for payment. However, Consultant may withhold from any payment any amounts in dispute because of, but not limited to the following:

- (i) defective work not remedied,
- (ii) third-party claims filed or reasonable evidence indicating probable filing of such claims,
- (iii) failure of the Contractor to make payment properly to Subcontractors or for labor, materials or equipment,
- (iv) damage to another contractor or other entity,
- (v) unsatisfactory prosecution of the Work by the Contractor, or
- (vi) amounts owed by Contractor to the Consultant under the Contract.

B. Each invoice submitted by Contractor to Consultant shall be deemed to be a warranty and representation on the part of Contractor to Consultant that all persons, corporations, or associations who had performed labor or services or furnished materials or supplies, were paid in full for all such labor, services, supplies, or equipment furnished to or employed by Contractor during the period covered by such invoice, unless Contractor specifies on any such invoice the name of the person or corporation who or which has not been so fully paid, and the amount then owing to any such person or corporation.

5. *Changes in the Work*

Contractor hereby gives Consultant the right to direct Contractor to make changes in the Work, which changes may be for additions to, omissions from, or alterations of, the Work, and Contractor shall make no changes in the Work unless directed or approved by Consultant. Contractor shall make no changes in the Work unless directed or approved by Consultant. Such changes in the Work shall be authorized and performed only in pursuance of a written change order signed by both Consultant and Contractor, hereinafter referred to as "Change Order" in the form attached hereto as Exhibit C. All Work so ordered shall be performed in strict compliance with all other terms and conditions of the Contract.

6. *Books and Records*

Contractor shall maintain adequate records to justify all charges, expenses, and costs incurred in performing the Work. Contractor shall retain all such records and all other project records for a period of ten (10) years. Consultant shall have access to, and the right to audit, such books, records, and documents.

7. *Time of Essence*

Time in this Contract is of the essence. Contractor shall complete the work within the time stated in Paragraph 3 hereof. Work will be performed during daylight hours, Monday through Friday. Work at night or on weekends may proceed only with the written permission of the Consultant.

8. *Investigation by Contractor of Property*

Contractor represents to Consultant that it has carefully examined all data available concerning the Work, has fully informed itself as to all existing conditions and limitations, and has satisfied itself that it has the type of equipment and facilities necessary to complete performance of the Work.

9. *Relationship of Parties*

The Work shall be performed by Contractor as an independent contractor, and its employees shall at all times be under its direction and control.

10. *Liens, Charges*

Contractor shall promptly pay all bills incurred by Contractor in performance of the Work hereunder, including, without limitation, bills for labor, services, equipment, and materials. Contractor shall not permit any lien or charge to be fixed, filed, or otherwise assessed against Consultant, the Client or the Property.

11. *Contractor's Representative*

Contractor shall provide a competent representative at the Property and shall do no work unless its representative is present. Contractor's representative shall be in full charge of the Work and all instructions or notices given to him shall be binding as if given to Contractor directly.

12. Hazardous or Toxic Substances

If this Contract involves hazardous or toxic substances, the following apply:

- (1) Contractor will be indemnified for losses, damages, personal injuries, or death claim only to the extent that Consultant is reimbursed for such indemnification by the Client.
- (2) Contractor will strictly comply with all safety or training requirements that are applicable to this work, but Consultant is not responsible for Contractor's methods or means of carrying out the work, or for the safety of Contractor's employees.

13. Indemnity

Contractor agrees to indemnify, save harmless and defend Consultant and Client from and against any and all liabilities, claims, penalties, forfeitures, suits, and the costs and expenses incident thereto, (including costs of defense, settlement and reasonable attorney's fees), which Consultant may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction of or damage to any property, contamination of or adverse effects on the environment, or any violation of governmental laws, regulations, standards or orders, whether at the federal, state, or local level, caused by (i) Contractor's breach of any material term or condition of this agreement or, (ii) any act or omission of Contractor, its employees, agents, subcontractors, and assignees in the performance of this agreement.

14. Insurance

- A. Contractor agrees to obtain and maintain, at its own expense from inception until the completion of the Work, the following insurance:
 - (i) Workman's Compensation in accordance with the requirements of the Laws of the State in which the Work is to be performed;
 - (ii) Comprehensive General Liability Insurance, including contractual liability and liability arising out of the use of automobiles to the following limits:
 - (a) Bodily Injury Liability Insurance with limits of \$1,000,000 per person and \$1,000,000 per occurrence.
 - (b) Property Damage Liability Insurance with a limit of \$2,000,000 per occurrence.

B. All such insurance policies shall provide (unless by specific statute applicable thereto it is otherwise provided) coverage for: (i) Damage to aboveground or underground property; (ii) Collapse of structures; (iii) Damage resulting from explosion or blasting.

C. All such insurance policies shall name Consultant as additional insured.

15. Authority of Consultant's Representative

Consultant shall have the right to have a representative present during all phases of the Work. Consultant's representative shall have authority to suspend the Work whenever he deems such action necessary to secure the proper performance of the Work. All judgmental decision making and execution of Work will be made on-site by Consultant.

16. Force Majeure

Each party shall not be liable to the other for failure to perform its obligations hereunder if and to the extent that such failure to perform is caused by or results from causes beyond its control, including, and limited to, strikes, lockouts, or other industrial disturbances; civil disturbances; fires; acts of God; acts of a public enemy; and compliance with any requirement of any governmental body or agency.

17. Covenants of Contractor

A. **FITNESS OF EMPLOYEES.** Contractor shall employ, or cause to be employed, on or in connection with the performance of the Work only persons who are fit and skilled in the Work assigned. Consultant reserves the right to remove, at the Consultant's sole discretion, any employees of the Contractor that the Consultant determines to be unqualified in performing the necessary work.

B. **JOB SAFETY.** Contractor shall use due care throughout the Work. Contractor shall cause its employees and all subcontractors to abide by all safety and security rules in force on the Property, including compliance with the Occupational Safety and Health Act.

C. **SITE SECURITY.** Consultant shall not be responsible for the loss of or damage to the Work or property of Contractor and/or his subcontractors, if any, from any cause except that caused by Consultant. Contractor shall be responsible for his equipment's security.

D. **COMPLIANCE WITH LAWS AND REGULATIONS.** Contractor has examined and evaluated all present and proposed laws, ordinances, and regulations

including, without limitation, all applicable Federal, state, and local environmental laws and regulations affecting or relating to the Work and Contractor shall comply with all such laws, ordinances and regulations. Contractor has obtained or will obtain, at its own expense, the permits, licenses, equipment, personnel, training (including Health and Safety) procedures, and facilities necessary to complete performance of the Work in accordance with the terms hereof and all applicable laws, ordinances and regulations. Subject to Paragraph 17 hereof, Contractor shall promptly file all reports, logs, records and results of tests required by Federal, state, or local law, ordinance, or regulation pertaining to the Work. All necessary taxes shall be paid by Contractor at its expense.

- E. **CONTRACTOR GUARANTY.** Contractor guarantees the Work against defects in workmanship and material and Contractor shall promptly remedy all such defects. Contractor shall arrange for the extension, to Client, of all additional warranties by suppliers of goods or services which are consistent with or extend or expand the terms of the above-described warranty of Contractor.

18. *Assignment and Subcontracting*

Contractor shall not assign or subcontract this Contract or any part thereof without the written consent of Consultant, nor shall Contractor assign any monies due or to become due to it hereunder without the written consent of Consultant.

19. *Termination*

Consultant shall have the unrestricted right, and without having to show default on the part of Contractor, to terminate this Contract upon two (2) days written notice to Contractor.

20. *Removal of Refuse*

Contractor shall keep the work site free at all times from accumulation of waste materials and rubbish resulting from the Work and at the completion thereof shall clean up the Work in a manner satisfactory to Consultant. This specifically excludes drill cuttings, drill mud, and fluid produced during development which will be disposed of as directed by the Client.

21. *Confidentiality*

- A. All information relating to the Property, obtained as a result of the performance of the Work shall be considered confidential and shall not be released or disclosed without the written permission of Consultant.

- B. Contractor shall prevent information concerning the Property, results of drilling exploration, drill cores, cuttings, sludge, and other samples from being disclosed to persons not authorized, without written authorization signed by Consultant or Consultant's representative permitting such disclosure.
- C. Contractor shall execute, deliver, and comply with any and all confidentiality agreements as may be requested by Consultant.

22. Notices

- A. Any notice to be given Consultant hereunder shall be given by mailing the same by United States mail to Consultant addressed as follows:

GERAGHTY & MILLER, INC.
75 E. Wacker Drive, Suite 1100
Chicago, Illinois 60601

- B. Any notice to be given to Contractor shall be given by mailing the same by United States mail to Contractor addressed as follows:

Environmental & Marine Services, Inc.
6472 City West Parkway
Eden Prairie, MN 55344

23. Entire Contract

This Contract sets forth the entire agreement between the parties with respect to the Work and supersedes all prior negotiations, representations, or agreements relating thereto, written, except to the extent that they are expressly incorporated herein. Unless otherwise provided herein, no amendments, changes, alterations, or modifications of this Contract shall be effective unless in writing executed by Consultant and Contractor. There are no third party rights of benefits under this Agreement.

24. Governing Law

This Contract and the legal relations of the parties shall be governed by the laws of the State of Michigan applicable to agreements negotiated, executed, delivered, and fully performed in such state.

25. Counterparts

This Contract may be signed in two or more counterparts, each of which shall be treated as an original but which, when taken together, shall constitute one and the same instrument.

26. Captions

Headings of particular paragraphs are inserted only for convenience and are in no way to be construed as a part of this Contract or as a limitation of the scope of the paragraphs to which they refer.

27. Severability

The various terms, provisions and covenants herein contained shall be deemed to be separate and severable, and the invalidity or unenforceability of any of them shall in no manner affect or impair the validity or enforceability of the remainder hereof.

28. Mediation

If any dispute arises out of or relates to this contract, or the breach thereof, and if said dispute cannot be settled through direct discussions, the parties agree to first endeavor to settle the dispute in an amicable manner by mediation before having recourse to a judicial forum. No written or oral representation made during the course of any mediation shall be deemed a party admission.

29. Claim

In the event the Contractor makes a claim against Consultant, at law or otherwise, for any alleged error, omission or other act or issue arising out of this contract, and to the extent that Contractor fails to prove such claim, then Contractor shall pay all costs, including attorney's fees, incurred by Consultant in defending itself against the claim.

30. Waiver

- A. No waiver of the terms, conditions, or covenants of this Agreement shall be binding and effective unless the same shall be in writing signed by the parties.
- B. A waiver of any breach of the terms, conditions, or covenants of this Agreement shall be for that one time only and shall not apply to any subsequent breach.

IN WITNESS WHEREOF the parties have caused this General Contract to be executed on the day and year first set forth above:

GERAGHTY & MILLER, INC.

By: Richard S. Bartlett

Title: Vice President

ENVIRONMENTAL & MARINE SERVICES, INC.

By: David R. Gillman

(A duly authorized officer of Contractor)

Title: VICE PRESIDENT

EXHIBIT A

Specifications for General Services

NOTE: THE SPECIFICATIONS FOR GENERAL SERVICES CAN BE FOUND IN THE BID PACKAGE SUBMITTED BY THE CONSULTANT TO THE CONTRACTOR ON JULY 18, 1991. THE SPECIFICATIONS IN THE BID PACKAGE WERE DETAILED BY THE FOLLOWING INCLUSIONS:

- 1) INVITATION TO BID
- 2) INSTRUCTIONS TO BIDDERS
- 3) CURRENT WORK PLAN

EXHIBIT B

Schedule of Charges for General Services

NOTE: THE SCHEDULE OF CHARGES FOR GENERAL SERVICES CAN BE FOUND IN THE CONTRACTOR'S BID SCHEDULE AS SUBMITTED TO THE CONSULTANT IN THE BID DATED JULY 22, 1991 (ENVIRONMENTAL AND MARINE SERVICES QUOTE # 91-0233).

EXHIBIT C

CHANGE ORDER

Pursuant to
General Contract

Dated _____, 19__

between

Geraghty & Miller, Inc.

and

Change Order No. _____ (Page ___ of ___)

Work Order No. _____

G&M Job No. _____

Client: _____

Site: _____

Pursuant to the terms and conditions of the General Contract dated _____,
19__, including all Exhibits, which is incorporated herein by reference, _____,
shall perform the Services described in Schedule I hereto.

GERAGHTY & MILLER, INC.

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____

ENVIRONMENTAL & MARINE SERVICES

**COMMERCIAL DIVING, MARINE CONSTRUCTION
and ENGINEERING**

**6472 CITY WEST PARKWAY
EDEN PRAIRIE, MINNESOTA 55344**

July 22, 1991

GERAGHTY & MILLER, INC.
75 East Wacker Drive
Suite 1100
Chicago, IL 60601
Attn: Gary Kruger

RE: Torch Lake Drum Removal; Houghton County, Michigan

Environmental and Marine Services, Inc., Quote # 91-0233

Gentlemen;

Environmental and Marine Services, Inc., (EMS) is pleased to provide this quote to cover the cost of locating, testing and removing of drums located in Torch Lake in Houghton County, Michigan

This quote does not include the cost of a crane to off load the barrels from the barge, and it is our understanding that a excavator will be on the job site and that it can be used for off loading. EMS did not include the cost of the overpack barrels for this project and can provide that cost if necessary.

EMS is in the process of removing contaminated barrels for the EPA on a site in Kokomo, Indiana. To our understanding this project is the worst case that the EPA has ever undertaken using divers to complete the work. We are very confident in our ability to complete the work within the time schedule that we have submitted, and look forward to working with you on this project.

Environmental and Marine Services, Inc.



David B. Gillson
Vice President

DBG/dmw

BID

Proposal of Environmental and Marine Services, Inc.
(hereinafter called "Bidder"), organized and existing under the laws of the State of Illinois doing
business as a "corporation", "a partnership", "an individual" as applicable.

To Geraghty & Miller, Inc.

In compliance with your Instructions to Bidders, Bidder hereby proposes to perform all
Work for the underwater drum removal at the Torch Lake Superfund Site in strict accordance
with the Contract Documents, within the time set forth therein, and at the prices stated herein.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid each party
thereto certifies as to his own organization, that this Bid has been arrived at independently,
without consultation, communication, or agreement as to any matter relating to this Bid with any
other Bidder or with any competitor.

Bidder hereby agrees to commence Work under this Project on or before a date to be
specified in the Notice to Proceed and to fully complete the Project within 60 days thereafter.

Bidder acknowledges receipt of the following Addendum:

N/A

Torch Lake Underwater Drum Removal
Houghton County, Michigan

C111201
Revision A

<u>Item</u>	<u>Bid Schedule</u> Type or Quantity	<u>Cost</u>
Mobilization/Demobilization	Lump Sum	<u>16,450.00</u>
Shoreline Survey	Lump Sum	<u>25,162.00</u>
Underwater Investigation of Drums 30 drums (Includes Camera and Dive Work)	Unit Price \$ <u>234</u> /drum	<u>7,020.00</u>
Underwater Sampling of Drums	3 drums Unit Price \$ <u>278</u> /drum	<u>834.00</u>
Underwater Overpack and Removal of Drums	20 drums Unit Price \$ <u>1,719</u> /drum	<u>34,380.00</u>
	Bond	<u>3,500.00</u>
	Grand Total	<u>87,346.00</u>

* Underwater Overpack and
Removal of Drums
in excess of 20

Unit Price \$ 526 /drum

Torch Lake Underwater Drum Removal
Houghton County, Michigan

C111201
Revision A

Respectfully Submitted:

Environmental and Marine Services, Inc

CONTRACTOR

6472 City West Parkway
Eden Prairie, Mn 55344

ADDRESS

H. Allen's Firm
SIGNATURE

7-22-91
DATE

(CORPORATE SEAL)

SWORN AND SUBSCRIBED BEFORE ME, THIS 22 DAY OF July,
1990.

Ruth E. Lee
NOTARY PUBLIC

MY COMMISSION EXPIRES: 5-3-96



Mobilization/Demobilization Detail

Types and Number of Personnel and Equipment Included in Mobilization/Demobilization Costs:

<u>Quantity</u>	<u>Type of Equipment/Personnel</u>
<u>1</u>	<u>Side scan sonar w/video (system)</u>
<u>1</u>	<u>28' Survey boat</u>
<u>4</u>	<u>10' x 40' x 4' Barges</u>
<u>2</u>	<u>10' x 20' x 4' Barges</u>
<u>1</u>	<u>Carry Deck Crane</u>
<u>2</u>	<u>Diving stations</u>
<u>1</u>	<u>Jobsite supervisor</u>
<u>2</u>	<u>Divers</u>
<u>1</u>	<u>Tender</u>
<u>1</u>	<u>Side scan operator</u>
<u>1</u>	<u>Boat Operator</u>
<u>1</u>	<u>Crane Operator</u>
<u>1</u>	<u>Diving platform</u>

Bidder's Estimate of Work Schedule

	<u>Start Date</u>	<u>End Date</u>
Mobilization	<u>8-19-91</u>	<u>8-30-91</u>
Initial Underwater Survey (Geophysical)	<u>8-22-91</u>	<u>8-28-91</u>
Follow-Up Underwater Survey (Camera)	<u>8-26-91</u>	<u>8-28-91</u>
Drum Overpacking and Removal	<u>9-03-91</u>	<u>9-17-91</u>
Transport of Drums to Shore	<u> </u>	<u>9-17-91</u>
Demobilization	<u>9-18-91</u>	<u>9-20-91</u>

PROPOSED SUBCONTRACTORS

The bidder further proposes that the following subcontracting firms or businesses will be awarded subcontracts for the portions of the work identified in the event that the bidder is awarded the Contract:

1. **NAME:** _____ **PHONE #** _____ **N/A** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

2. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

3. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

4. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

5. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

Torch Lake Underwater Drum Removal
Houghton County, Michigan

C111201
Revision A

HEALTH AND SAFETY CERTIFICATION

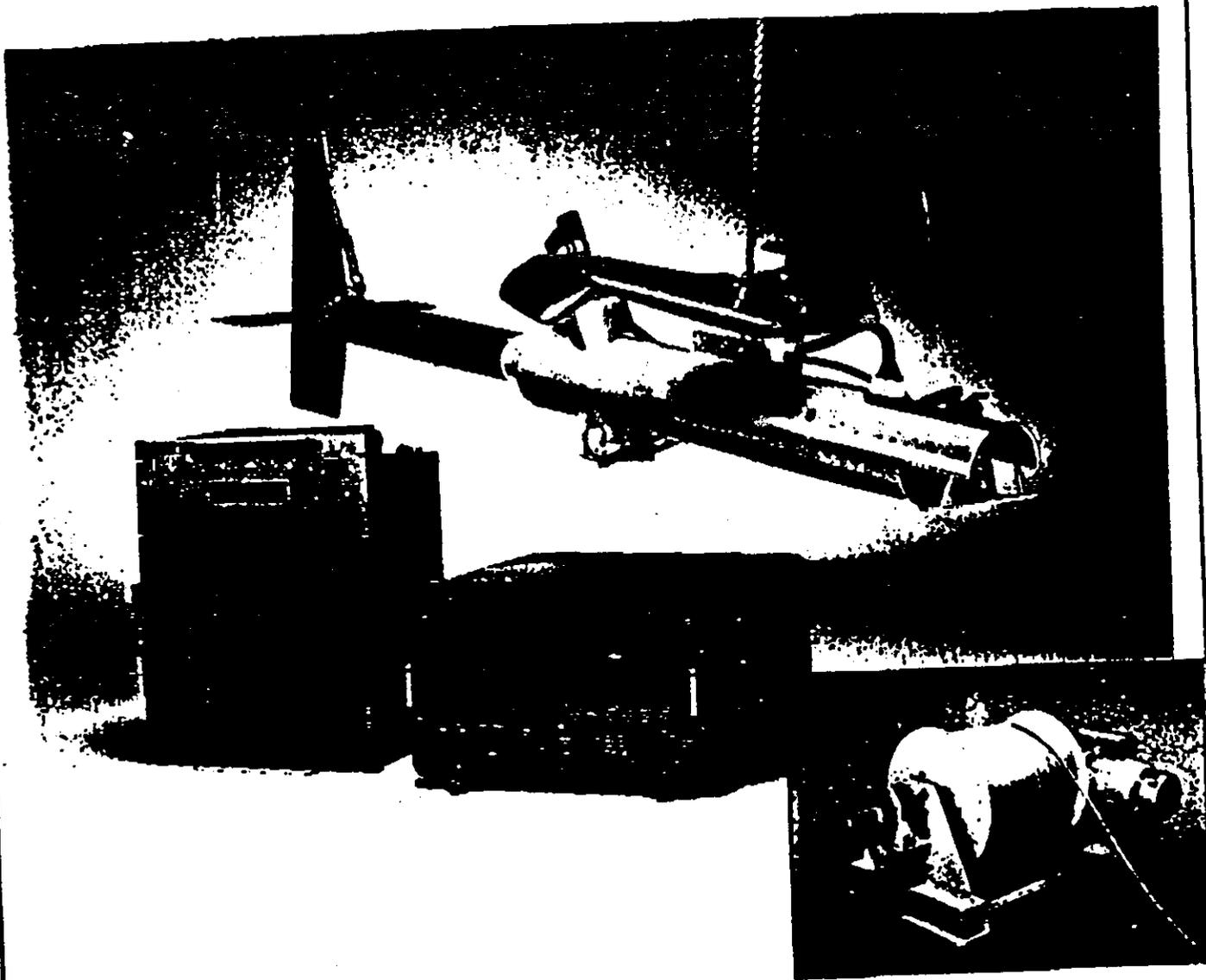
The Contractor Environmental & Marine Service, hereby certifies that the Contractor and its employees who will be engaged in working on or near the Torch Lake Underwater Drum Removal project site are covered by, and participants in, a proper Health and Safety program which meets the requirements of applicable OSHA regulations for work in potentially hazardous areas as described in 29 CFR Part 1910.120 and other applicable federal, state, and local rules and regulations pertaining to health and safety requirements for work at the site.

H. Dennis Brown
(Signature)

President
(Title)

SEA SEARCH® MK V System

Modular - High Performance Camera and Side Scan Sonar Towed System



The SEA SEARCH MK V gives the offshore operator real time information about the sea floor. The state of the art system is equipped with an integrated side scan sonar and low light video camera allowing the operator visual confirmation of sonar targets. Simultaneous side scan sonar and video makes the MK V the preferred alternative to an ROV for target identification.

Features

- Simultaneous side scan sonar and video.
- Rugged enough for the heavy duty survey, search, and locate needs of commercial and military users.
- Lightweight and portable for use on vessels of opportunity.
- Depth rating starts at 800 meters.
- Easily operated by a crew of two.

ENVIRONMENTAL & MARINE SERVICES

SEA SEARCH® MK V System

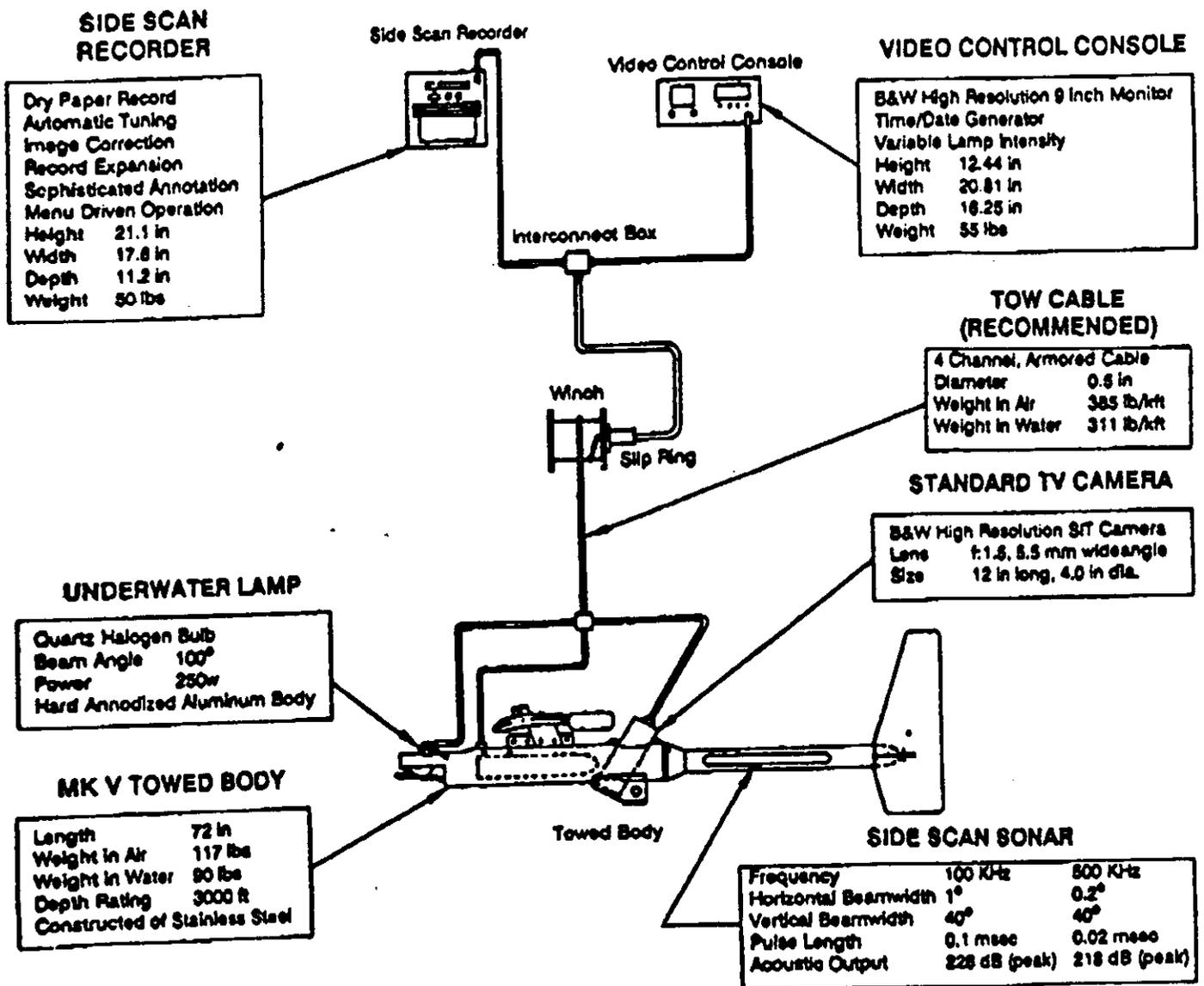
Camera and Side Scan Sonar Towed System

System Description

The SEA SEARCH MK V towed vehicle is equipped with a low-light, high resolution, black and white SIT camera and a 100kHz side scan sonar. The two sensors share the same tow cable, deck cable, winch and slip rings. The sonar recorder and video console contain special electronics that allow the video and sonar signals to be transmitted over the same cable simultaneously. This

distinctive feature allows the SEA SEARCH MK V to perform a dual mission role for expediting the survey, search, and location process. Options include: color CCD camera, video tape recorder, 500kHz or simultaneous 100/500kHz side scan sonar, winch, slip ring, and tow cables. The SEA SEARCH MK V System can be combined with an integrated navigation system and short baseline tracking system to assist in the precise location and identification of targets.

General Characteristics (Specification Summary)



APPENDIX H

CHEMICAL WASTE MANAGEMENT CONTRACT

GENERAL CONTRACT

This General Contract is made and entered into on this 10th day of September, 1991, by and between GERAGHTY & MILLER, INC., a Delaware corporation, hereinafter referred to as "Consultant", and Chemical Waste Management Inc., ENRAC Division - Midwest Region, hereinafter referred to as "Contractor", for services for the respondents to the EPA's Administrative Order on Consent, hereinafter referred to as "Client", at the site known as the Torch Lake Superfund Site, Houghton County, Michigan, hereinafter referred to as "Property".

In consideration of the covenants and agreements herein contained, it is mutually agreed as follows:

1. *The Contract Documents*

The Contract between the Consultant and the Contractor consists of this signed "General Contract" which includes and incorporates the following:

- A. Exhibit A - "Specifications for Services"
- B. Exhibit B - "Schedule of Charges for Services"

In the event of any conflict between this General Contract and any correspondence or other documents exchanged by the parties, this General Contract shall control.

2. *Work*

Contractor will, as an independent contractor, furnish all necessary supervision, labor, materials and equipment and shall perform the services as described in Exhibit A, which shall hereinafter be referred to as "Work".

3. *Term of Contract*

The Contractor shall provide service in accordance with Exhibit A also described herein as the "Work". The Work shall commence on September 16, 1991 and be completed by November 11, 1991. This period of time shall be the "Contract Time." The consultant reserves the right to extend the Contract Time if necessary and excusable delays, as determined jointly by the Consultant and Contractor, occur in the completion of the Work to be performed by the Contractor.

4. *Contract Price and Payment*

Consultant shall pay to Contractor, as compensation for the Work, the amounts agreed upon in Exhibit B. Payments or credits for changes in the Work, as provided in Paragraph 2

hereof shall be in such amount as the parties shall agree upon in writing. Within ten (10) days following Consultant's receipt of the applicable progress or final payment from Client delivered to Consultant, or within 120 days whichever comes earlier, Consultant shall pay the full amount of such invoice; *provided, however*, that if Consultant objects to any portion of an invoice, Consultant shall notify Contractor of objection and the grounds therefor within 30 days of the date the invoice is received, and the parties immediately shall make every effort to settle the disputed portion of the invoice. Consultant, in any event, shall pay every portion of the invoice that is not in dispute within the period for payment. However, Consultant may withhold from any payment any amounts in dispute because of, but not limited to the following:

- (i) defective work not remedied,
- (ii) third-party claims filed or reasonable evidence indicating probable filing of such claims,
- (iii) failure of the Contractor to make payment properly to Subcontractors or for labor, materials or equipment,
- (iv) damage to another contractor or other entity,
- (v) unsatisfactory prosecution of the Work by the Contractor, or
- (vi) amounts owed by Contractor to the Consultant under the Contract.

5. *Changes in the Work*

Contractor hereby gives Consultant the right to direct Contractor to make changes in the Work, which changes may be for additions to, omissions from, or alterations of, the Work, and Contractor shall make no changes in the Work unless directed or approved by Consultant. Contractor shall make no changes in the Work unless directed or approved by Consultant. Such changes in the Work shall be authorized and performed only in pursuance of a written change order signed by both Consultant and Contractor, hereinafter referred to as "Change Order" in the form attached hereto as Exhibit C. All Work so ordered shall be performed in strict compliance with all other terms and conditions of the Contract.

6. *Books and Records*

Contractor shall maintain adequate records to justify all charges, expenses, and costs incurred in performing the Work. Contractor shall retain all such records and all other project records for a period of three (3) years. Consultant shall have access to, and the right to audit, such books, records, and documents directly related to the project.

7. *Time of Essence*

Time in this Contract is of the essence. Contractor shall complete the work within the time stated in Paragraph 3 hereof. Work will be performed during daylight hours, Monday through Friday. Work at night or on weekends may proceed only with the written permission of the Consultant.

8. *Investigation by Contractor of Property*

Contractor has satisfied itself that it has the type of equipment and facilities necessary to complete performance of the Work. Consultant shall be responsible for the adequacy, accuracy and sufficiency of any designs, drawings, surveys or specifications which have been or which will be supplied to the Contractor. Consultant shall furnish drawings, specifications and surveys which adequately represent the Work to be performed under this Agreement. All such designs, drawings, surveys, specifications and instructions shall be consistent with this Agreement.

9. *Relationship of Parties*

The Work shall be performed by Contractor as an independent contractor, and its employees shall at all times be under its direction and control.

10. *Liens, Charges*

Provided Contractor has been paid in accordance with this Agreement, Contractor shall promptly pay all bills incurred by Contractor in performance of the Work hereunder, including, without limitation, bills for labor, services, equipment, and materials. Contractor shall not permit any lien or charge to be fixed, filed, or otherwise assessed against Consultant, the Client or the Property.

11. *Contractor's Representative*

Contractor shall provide a competent representative at the Property and shall do no work unless its representative is present. Contractor's representative shall be in full charge of the Work and all instructions or notices given to him shall be binding as if given to Contractor directly.

12. *Hazardous or Toxic Substances*

If this Contract involves hazardous or toxic substances, the following apply:

- (1) Contractor agrees to indemnify and save harmless the Consultant, its present and past officers or directors, employees and agents, from and against any and all

liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs, and expenses incidental thereto (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by Contractor, or any negligent or wilful act or omission of Contractor, its employees or subcontractors in the performance of this Agreement.

The Consultant agrees to indemnify and save harmless the Contractor, its present and past officers or directors, employees and agents, from and against any and all liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, and costs, and expenses incidental thereto (including cost of defense, settlement, and reasonable attorney's fees), which any or all of them may hereafter suffer, incur, be responsible for or pay out as a result of bodily injuries (including death) to any person, damage (including loss of use) to any property (public or private), contamination of or adverse effects on the environment, or any violation or alleged violation of statutes, ordinances, orders, rules or regulations of any governmental entity or agency, directly or indirectly caused by, or arising out of breach of any warranties by Consultant, or any negligent or wilful act or omission of Consultant, its employees or subcontractors in the performance of this Agreement.

- (2) Consultant agrees to provide Contractor, its employees and subcontractors a safe working environment for any work, in performance of this Agreement, which must be undertaken on premises owned or controlled by the Consultant. While its employees or subcontractors are on Consultant's premises, Contractor will maintain strict work discipline and effect its work in compliance with governmental laws or regulations pertaining to occupational safety and health. Contractor, its employees and subcontractors shall also comply with the Consultants's safety procedures while on the Consultant's premises, provided such procedures have been made known to Contractor or are attached hereto.

13. Insurance

- A. Contractor agrees to obtain and maintain, at its own expense from inception until the completion of the Work, the following insurance:
 - (i) Workman's Compensation in accordance with the requirements of the Laws of the State in which the Work is to be performed;

(ii) **Comprehensive General Liability Insurance, including contractual liability and liability arising out of the use of automobiles to the following limits:**

- (a) **Bodily Injury Liability Insurance with limits of \$1,000,000 per person and \$1,000,000 per occurrence.**
- (b) **Property Damage Liability Insurance with a limit of \$1,000,000 per occurrence.**
- (c) **Umbrella Liability Insurance with a limit of \$1,000,000.**

B. **All such insurance policies shall provide (unless by specific statute applicable thereto it is otherwise provided) coverage for: (i) Damage to aboveground or underground property; (ii) Collapse of structures; (iii) Damage resulting from explosion or blasting.**

14. *Authority of Consultant's Representative*

Consultant shall have the right to have a representative present during all phases of the Work. Consultant's representative shall have authority to suspend the Work whenever he deems such action necessary to secure the proper performance of the Work.

15. *Force Majeure*

Each party shall not be liable to the other for failure to perform its obligations hereunder if and to the extent that such failure to perform is caused by or results from causes beyond its control, including, without limitation, strikes, lockouts, or other industrial disturbances; civil disturbances; fires; acts of God; acts of a public enemy; acts or omissions of subcontractors; compliance with any regulations, order, or requirement of any governmental body or agency; or inability to obtain transportation or necessary materials on the open market.

16. *Covenants of Contractor*

A. **FITNESS OF EMPLOYEES.** Contractor shall employ, or cause to be employed, on or in connection with the performance of the Work only persons who are fit and skilled in the Work assigned. Consultant reserves the right to remove any employees of the Contractor that the Consultant determines to be unqualified in performing the necessary work.

- B. **JOB SAFETY.** Contractor shall use due care throughout the Work. Contractor shall cause its employees and all subcontractors to abide by all safety and security rules in force on the Property, including compliance with the Occupational Safety and Health Act.
- C. **SITE SECURITY.** Consultant shall not be responsible for the loss of or damage to the Work or property of Contractor and/or his subcontractors, if any, from any cause except that caused by Consultant. Contractor shall be responsible for his equipment's security.
- D. **COMPLIANCE WITH LAWS AND REGULATIONS.** Contractor has examined and evaluated all present and proposed laws, ordinances, and regulations including, without limitation, all applicable Federal, state, and local environmental laws and regulations affecting or relating to the Work and Contractor shall comply with all such laws, ordinances and regulations. Contractor has obtained or will obtain, at its own expense, the permits, licenses, equipment, personnel, training (including Health and Safety) procedures, and facilities necessary to complete performance of the Work in accordance with the terms hereof and all applicable laws, ordinances and regulations. Subject to Paragraph 17 hereof, Contractor shall promptly file all reports, logs, records and results of tests required by Federal, state, or local law, ordinance, or regulation pertaining to the Work. All necessary taxes, with the exception of disposal and sales taxes, shall be paid by Contractor at its expense.
- E. **CONTRACTOR GUARANTY.** Contractor guarantees the Work against defects in workmanship and material and Contractor shall promptly remedy all such defects. Contractor shall arrange for the extension, to Client, of all additional warranties by suppliers of goods or services which are consistent with or extend or expand the terms of the above-described warranty of Contractor.

17. *Assignment and Subcontracting*

Contractor shall not assign or subcontract this Contract or any part thereof without the written consent of Consultant, nor shall Contractor assign any monies due or to become due to it hereunder without the written consent of Consultant.

18. *Termination*

If the Work should be stopped under an order of any court, or other public authority for a period of more than five (5) days through no act or fault of Contractor or if Consultant shall in violation of the terms of this Agreement fail to make any progress payment as set forth in Exhibit A hereto, then Contractor may immediately stop Work or terminate this Agreement and

recover from the Consultant payment for all Work performed plus reasonable profit if not included in the payment for Work performed.

By written notice, Consultant may, with ten (10) days notice, terminate this Agreement without any liability for breach of Agreement. In such event, payment shall be due to Contractor only for those services performed by Contractor up to the date of Consultant's termination; and Consultant and Contractor will consult on the appropriate amount of demobilization costs, if any, incurred by the other in terminating this Agreement.

19. *Removal of Refuse*

Contractor shall keep the work site free at all times from accumulation of waste materials and rubbish resulting from the Work and at the completion thereof shall clean up the Work in a manner satisfactory to Consultant. This specifically excludes drill cuttings, drill mud, and fluid produced during development which will be disposed of as directed by the Client.

20. *Confidentiality*

Contractor and Consultant shall treat as confidential property and not disclose to others during or subsequent to the term of this Agreement, except as necessary to perform this Agreement (and then only on a confidential basis satisfactory to both parties), any information (including any technical information, experience or data) regarding either party's plans, programs, plants, processes, products, costs, equipment, operations or customers which may come within the knowledge of the parties, their officers or their employees in the performance of this Agreement, without in each instance securing the prior written consent of the other party.

Contractor shall also treat as confidential and shall not disclose to others, except as required by law, information relating to the chemical composition of the Waste Materials or the quantity of Waste Materials delivered to it by Consultant.

Consultant shall also treat as confidential and shall not disclose to others, except as required by law, this form of Agreement.

Nothing above, however, shall prevent either Contractor or Consultant from disclosing to others or using in any manner information which either party can show:

- (a) Has been published and has become part of the public domain other than by acts, omissions or fault of Contractor or Consultant or their Employees; or,
- (b) Has been furnished or made known to Contractor or Consultant by third parties (other than those acting directly or indirectly for or on

behalf of Contractor or Consultant) as a matter of legal right without restrictions on its disclosure; or,

- (c) Was in either party's possession prior to the disclosure thereof by Consultant or Contractor to each other.

Provided, however, neither party shall release, or cause or allow the release of, information to the communications media, except as required by law, concerning the existence or terms of this Agreement, including identification of the Consultant of the Waste Materials, identification of the Facility receiving the Waste Materials, or the general description, characteristics or constituents of the Waste Materials, without in each instance securing the prior written consent of the other party.

The foregoing obligations shall survive the termination or expiration of the Agreement.

21. Notices

- A. Any notice to be given Consultant hereunder shall be given by mailing the same by overnight courier or facsimile transmission, receipt confirmed, to Consultant addressed as follows:

GERAGHTY & MILLER, INC.
75 E. Wacker Drive, Suite 1100
Chicago, Illinois 60601

- B. Any notice to be given to Contractor shall be given by mailing the same by United States mail to Contractor addressed as follows:

Chemical Waste Management, Inc.
ENRAC Division - Midwest
7250 West College Drive
Palos Heights, IL 60463

22. Entire Contract

This Contract sets forth the entire agreement between the parties with respect to the Work and supersedes all prior negotiations, representations, or agreements relating thereto, oral or written, except to the extent that they are expressly incorporated herein. Unless otherwise provided herein, no amendments, changes, alterations, or modifications of this Contract shall

be effective unless in writing executed by Consultant and Contractor. There are no third party rights of benefits under this Agreement.

23. *Governing Law*

This Contract and the legal relations of the parties shall be governed by the laws of the State of Michigan applicable to agreements negotiated, executed, delivered, and fully performed in such state.

24. *Counterparts*

This Contract may be signed in two or more counterparts, each of which shall be treated as an original but which, when taken together, shall constitute one and the same instrument.

25. *Captions*

Headings of particular paragraphs are inserted only for convenience and are in no way to be construed as a part of this Contract or as a limitation of the scope of the paragraphs to which they refer.

26. *Severability*

The various terms, provisions and covenants herein contained shall be deemed to be separate and severable, and the invalidity or unenforceability of any of them shall in no manner affect or impair the validity or enforceability of the remainder hereof.

27. *Mediation*

If any dispute arises out of or relates to this contract, or the breach thereof, and if said dispute cannot be settled through direct discussions, the parties may agree to first endeavor to settle the dispute in an amicable manner by mediation before having recourse to a judicial forum. No written or oral representation made during the course of any mediation shall be deemed a party admission.

28. *Claim*

In the event that either party makes a claim against the other, at law or in equity, for any alleged error, omission or other act or issue arising out of this contract, and to the extent that the party prevails on its claim in a court of law, then the other party shall pay all costs, including attorney's fees, incurred by the party defending itself against the claim.

29. Waiver

- A. No waiver of the terms, conditions, or covenants of this Agreement shall be binding and effective unless the same shall be in writing signed by the parties.
- B. A waiver of any breach of the terms, conditions, or covenants of this Agreement shall be for that one time only and shall not apply to any subsequent breach.

30. Waste Materials to be Removed from Site

For purposes of this Agreement, the term "Waste Materials" refers to those solid, liquid semi-solid, or contained gaseous materials which are generally described in and which have the physical, chemical, biological and radioactive constituents, characteristics and properties within the specifications set forth in the Waste Material Profile Sheet(s) executed by the Consultant. The term "Waste Materials" also includes containers described in the Waste Material Profile Sheets if they do now, or have in the past, contain Waste Materials on the site. The term "Unit of Waste Materials" refers to a single container of Waste Materials (such as a barrel, drum, box or tanker load) and also includes units of measure (such as yard, gallon or ton).

Materials and containers shall be considered non-conforming: (i) if they are not in accordance with the warranties, descriptions, specifications or limitations stated in this Agreement or the Waste Material Profile Sheet; or (ii) if they have constituents or components, not specifically identified in the Waste Material Profile Sheet, (a) which increase the nature or extent of the hazard and risk undertaken by the Disposer in agreeing to handle, load, transport, store, process, treat or dispose of the Waste Products; or (b) for whose storage, treatment or disposal the Disposal Facility (or Storage Facility, if any) is not designed or permitted; or (c) which increase the costs of the Contractor in handling, transporting, treating, or disposing of the Waste Materials.

The Work shall not be construed to include non-conforming Waste Materials or quantities of Waste Materials in excess of those quantities set forth in the Waste Material Profile Sheet(s) and/or Exhibit A.

31. Consultants Warranties

Consultant warrants and represents to Contractor that:

- a) The description of the Waste Materials attached hereto is true and correct in all material respects and fairly advises Contractor of the hazards and risks known by the Consultant to be incident to the handling, loading, transportation, storage, and disposal of the Waste Materials.

- b) Consultant has made known all information he may have as to the Waste Materials, the surface and subsurface conditions in the vicinity of the Work, topographical surveys, chemical analysis or other information that might assist Contractor in properly evaluating the nature, and character of the Waste Materials and the Work to be performed.
- c) If Consultant receives information during the term of this Agreement that the Waste Materials described herein or some component thereof, present or may present a hazard or risk to persons or the environment which was not previously disclosed to Contractor, Consultant shall promptly report such information to Contractor.
- d) The Client has sole title to the Waste Materials which are the subject of this agreement and is under no legal restraint, statutory, regulatory, administrative or judicial which prohibits the transfer of possession or title of such Waste Materials to Contractor.
- e) Consultant has examined and evaluated all present and proposed laws, ordinances, and regulations including, without limitation, all applicable federal, state, and local environmental laws and regulations affecting or relating to the Work and Consultant shall comply with all such laws, ordinances, and regulations.

IN WITNESS WHEREOF the parties have caused this General Contract to be executed on the day and year first set forth above:

GERAGHTY & MILLER, INC.

By: *Bryon Vanderlaan*

Title: *Assistant*

CHEMICAL WASTE MANAGEMENT, INC.

By: *James H. [Signature]*

(A duly authorized officer of Contractor)

Title: *Regional Business Development Manager*

EXHIBIT A

Specifications for General Services

NOTE:

THE SPECIFICATIONS FOR GENERAL SERVICES CAN BE FOUND IN THE BID PACKAGE SUBMITTED BY THE CONSULTANT TO THE CONTRACTOR ON JULY 15, 1991, AND IN THE ADDENDUM TO THE BID PACKAGE DATED JULY 18, 1991. THE SPECIFICATIONS IN THE BID PACKAGE AND ADDENDUM WERE DETAILED BY THE FOLLOWING INCLUSIONS:

- 1) INVITATION TO BID COVER LETTER
- 2) INVITATION TO BID
- 3) INSTRUCTIONS TO BIDDERS
- 4) CURRENT WORK PLAN
- 5) ADDENDUM COVER LETTER
- 6) ROUND 1 DRUM SAMPLING RESULTS
- 7) ROUND 2 DRUM SAMPLING RESULTS

EXHIBIT B

Schedule of Charges for General Services

NOTE:

THE SCHEDULE OF CHARGES FOR GENERAL SERVICES CAN BE FOUND IN THE CONTRACTOR'S BID SCHEDULE AS SUBMITTED TO THE CONSULTANT IN THE BID DATED JULY 22, 1991 (CWM-ENRAC CONTROL NO. 91-07-782) AND IN THE AUGUST 23, 1991 ADDENDUM 01 TO THE COST PROPOSAL.

EXHIBIT C

CHANGE ORDER

Pursuant to
General Contract

Dated _____, 19__

between

Geraghty & Miller, Inc.

and

Change Order No. _____ (Page ___ of ___)

Work Order No. _____

G&M Job No. _____

Client: _____

Site: _____

Pursuant to the terms and conditions of the General Contract dated _____,
19 ____, including all Exhibits, which is incorporated herein by reference, _____,
shall perform the Services described in Schedule I hereto.

GERAGHTY & MILLER, INC.

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Date: _____



Chemical Waste Management, Inc.

ENRAC Division - Midwest
7250 West College Drive
Paine Hall
Chicago, Illinois 60661
708-361-9200

July 22, 1991

Mr. Gary W. Kruger
GERAGHTY & MILLER, INC.
75 E. Wacker Drive, Suite 1100
Chicago, IL 60601

RE: COST PROPOSAL FOR THE TORCH LAKE
ON LAND DRUM REMOVAL EFFORT
CWM-ENRAC CONTROL NO. 91-07-782

Dear Mr. Kruger:

Chemical Waste Management, Inc. through its Environmental Remedial Action Division (CWM-ENRAC) is pleased to present this cost proposal for the above referenced project. This proposal is based on the work plan provided by your office in addition to the site walk attended by Pat Bolger of CWM-ENRAC.

CWM-ENRAC is a division of Chemical Waste Management, Inc., the country's leading firm specializing in the management, treatment, and disposal of hazardous waste. Chemical Waste Management backs CWM-ENRAC with the engineering, operating, and financial infrastructure required to accomplish the objectives of remedial actions at our clients' sites.

CWM's corporate support insures that all CWM-ENRAC projects operate under strict health, safety, and regulatory compliance policies and procedures.

Since CWM-ENRAC's organization in 1981, we have successfully completed over 3000 remedial projects. CWM-ENRAC's demonstrated experience in all aspects of the hazardous waste industry, coupled with our financial strength and high levels of insurance coverage, allows CWM-ENRAC to maintain an unparalleled commitment to the delivery of quality services and customer satisfaction.

CWM-ENRAC is pleased to submit this proposal and looks forward to discussing it with you. If you have any questions, please contact any of the following CWM representatives: Denise Cerny at (708) 361-7546, Mark Pearson at (313) 462-6374 or Kurt Bauer at (708) 513-4826.

Sincerely,

CHEMICAL WASTE MANAGEMENT, INC.
Environmental Remedial Action Division

Denise M. Cerny
Denise M. Cerny
Project Development Manager

Mark L. Pearson
Mark L. Pearson
Business Development Manager

DMC/MLP/tcp



PRICING ASSUMPTIONS

- ~~1) Any contaminated soil encountered during the drum removal will not be addressed under this contract.~~ *delete as per D. Cerny 7/24/91*
- 2) Off-shore geophysical investigation is not included.
- ~~3) Decontamination water from all sources will not be collected, and it will be discharged directly to the surface on site.~~ *delete as per D. Cerny 7/24/91*
- 4) CWM-ENRAC's scope of work includes sampling of the drums only. Analytical work for characterization will be provided by others. Only analytical required for waste disposal approval will be provided by CWM-ENRAC.
- 5) If RCRA hazardous soil is encountered it will be transported and disposed of at the per drum rates quoted.
- 6) Drum staging will be in a storage trailer at Area 1, and on Visqueen, where necessary, for Areas 2,3, and 4.
- 7) For purposes of providing a schedule, CWM-ENRAC has assumed that all drummed material is RCRA waste and will be disposed of at Adams Center Landfill in Ft. Wayne, IN. If any stabilization is required it will be billed at an additional \$125/drum. All waste disposal and associated pricing is subject to facility approval.
- 8) CWM-ENRAC's schedule assumes that all off-shore drums will be staged and ready for sampling while CWM-ENRAC is on-site.



- 9) CWM-ENRAC has assumed that all drums requiring disposal will be landfilled. However, presented below is an estimated cost for incineration of the waste material. Pricing is subject to CERCLA status approval.

Trade Waste Incineration	\$750/drum
Sauget, IL	
(Disposal only)	

- 10) CWM-ENRAC will collect and drum all decontamination water. Following a waste disposal decision, the drummed water will be properly disposed of. A price will be quoted at that time.
- 11) Exceptions to the contract, if any, will be provided after Notice of Award is received by CWM-ENRAC.
- 12) The attached General Terms and Conditions apply.



PROJECT EXPERIENCE

Outlined below are three projects CWM-ENRAC completed which included extensive drum handling. References could not be supplied in the short turnaround time but will be provided if necessary.

SCOPE OF WORK

1. Enviro-Chem - Zionsville, Indiana

U.S. EPA's Region V contracted with ENRAC to undertake an emergency action to temporarily stabilize the site while awaiting an anticipated settlement with the potentially responsible parties.

Following completion of the emergency action, CWM was selected by the generator group to perform and complete surface cleanup. Under terms of the consent decree, ENRAC's tasks included the analysis and identification of all remaining waste material in approximately 28,000 drums, tanks, and waste ponds; the removal, transportation, and disposal of those materials, assuring compliance with transportation, treatment, and disposal regulations of state and federal agencies; and the managing of storm water throughout the project duration to prevent the intrusion of off-site surface water runoff and divert on-site runoff to an existing cooling water pond on-site.

OBJECTIVES ACHIEVED

To complete the cleanup effort approximately 4,300 cubic yards of contaminated soil, approximately 28,000 drums of oil wastes and chlorinated materials, 300,000 gallons of liquids in 53 bulk tanks, and 1,500,000 gallons of ponded liquid were excavated, transported, and disposed of under EPA supervision.



COST/SCHEDULE VARIANCE

The surface cleanup work was completed within the eight month time frame specified in the consent decree, and within the costs negotiated in the lump sum contract.

SCOPE OF WORK

2. Geneva Industries - Houston, Texas

CWM's ENRAC Division was contracted by U.S. EPA's Region VI to complete a planned removal of the Geneva Industries abandoned PCB's manufacturing site. The 13 acre site included several waste oil lagoons containing contaminated liquids and sludges (some sludges containing up to 44,000 ppm PCB's), a diked area surrounding two large bulk storage tanks, approximately 500 drums of various organic waste, and several landfill areas.

In addressing the treatment and disposal of the contaminated wastewater, a two cell modular adsorption treatment system was installed rather than removing, transporting, and treating the liquids off-site. The material discharged from the adsorption process was stored in 80,000 gallon on-site holding tanks, from which the purified water was transported via vacuum tankers to a nearby POTW.

OBJECTIVES ACHIEVED

The major tasks accomplished included: the removal, treatment and disposal of approximately 1.5 million gallons of contaminated water, excavation, stabilization, treatment and disposal of approximately 3,000 cubic yards of lagoon solids; and the removal and disposal of drummed waste. The excavated areas of the lagoons and ponds were lined, covered with sand, and backfilled with clay and sand. A top liner was then installed and capped with clay. Approximately 60,000 square feet of area were capped.



COST/SCHEDULE VARIANCE

The job was completed in a shorter time frame than initially estimated, and this is reflected in the final cost of the project.

SCOPE OF WORK

3. Seymour Recycling Center - Seymour, Indiana

Chemical Waste Management assumed responsibility for the complete surface cleanup of the abandoned Seymour Recycling Center in Seymour, Indiana, after working with the generator group from the inception of the project. The project included removal and disposal of waste contained in over 45,000 drums, 113 bulk tanks, and 15,000 cubic yards of contaminated soil.

Chemical Waste Management's technical personnel assessed and characterized the site, developed a scope of work necessary for a surface cleanup, prepared the technical proposal, and negotiated with U.S. EPA and the Indiana State Board of Health for acceptance of the proposal. With the acceptance of the technical proposal, CWM assisted the generator's legal group in the preparation of the consent decree that was approved by the Department of Justice and the U.S. District Court. ENRAC quickly mobilized and began the site preparation, including road construction, establishment of a drum crushing area, and placement of decontamination units, mobile laboratories, and office trailers. An on-going air monitoring program was established. Several on-site wells and underground piping running through the site were sealed. Complete chemical analysis was performed so that the bulking of compatible materials could be done prior to transportation and disposal.

OBJECTIVES ACHIEVED

All wastes, including 45,000 drums, tanks, debris, hazardous chemical waste, and approximately 15,000 cubic yards of soil, were transported to CWM facilities and disposed



of in accordance with RCRA regulations. The excavated areas were completely restored with clean soil.

COST/SCHEDULE VARIANCE

The project was completed within the negotiated cost and schedule.



GENERAL TERMS AND CONDITIONS

- (1) This proposal and all attachments and exhibits are considered confidential and proprietary and shall not be loaned, copied, distributed or published, in whole or in part, or used for any purpose other than for which it was intended, without prior written consent of CWM-ENRAC.
- (2) Invoices will be submitted by CWM-ENRAC biweekly and are payable within 15 days unless otherwise stated. Invoices not settled within 15 days are subject to 1-1/2% per month service charge on the outstanding balance.
- (3) Owner is responsible for Federal, State and Local disposal and sales taxes which are not included in the project pricing.
- (4) Regulatory permits which are required for the on-site portion of the project are the responsibility of the Owner unless otherwise expressed in the attachments and/or exhibits.
- (5) Pricing is firm for 30 days following the date of the proposal.
- (6) Any waste which the disposal facility cannot receive, treat, store, process, handle or dispose of will be outside the scope of the contract and CWM-ENRAC will have no obligation to receive, treat, store, process, handle or dispose of such waste.

8/15/88
LSUR

BID

Proposal of Chemical Waste Management, Inc. - ENRAC - Midwest Region
(hereinafter called "Bidder"), organized and existing under the laws of the State of Illinois doing
business as a "corporation", "a partnership", "an individual" as applicable.

To Geraghty & Miller, Inc.

In compliance with your Instructions to Bidders, Bidder hereby proposes to perform all
Work for the on-land drum removal effort at the Torch Lake Superfund Site in strict accordance
with the Contract Documents, within the time set forth therein, and at the prices stated herein,
subject to the execution of a mutually acceptable agreement,

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid each party
thereto certifies as to his own organization, that this Bid has been arrived at independently,
without consultation, communication, or agreement as to any matter relating to this Bid with any
other Bidder or with any competitor.

Bidder hereby agrees to commence Work under this Project on or before a date to be
specified in the Notice to Proceed and to fully complete the Project within * days thereafter.

Bidder acknowledges receipt of the following Addendum:

Addendum date 7/18/91

Round 1 Drum Sampling Results

Round 2 Drum Sampling Results

* Subject to waste disposal approval and availability of disposal slots.

Torch Lake On-Land Drum Removal
Houghton County, Michigan

C111201
Revision A

Bid Schedule

<u>Item</u>	<u>Type or Quantity</u>	<u>Cost</u>
Mobilization/Demobilization	Lump Sum	<u>\$14,904.23</u>
Drum Removal and Overpacking	37 Drums Unit Price <u>\$235.68/drum</u>	<u>\$ 8,720.16</u>
Drum Sampling	32 Drums Unit Price <u>\$151.78/drum</u>	<u>\$ 4,856.96</u>
Staging of Drums	47 Drums Unit Price <u>\$8.00* /drum/week</u>	<u>\$ 376.00</u>
Disposal of Drums (Includes additional characterization, permitting, transportation, and disposal costs in accordance with all applicable laws and regulations)		
Hazardous Waste Drums	3 Drums Unit Price <u>\$483.07/drum</u>	<u>\$ 1,449.21</u>
Hazardous Characteristic Drums	27 Drums Unit Price <u>\$483.07/drum</u>	<u>\$13,042.80</u>
	Bond	<u>\$ 1,001.37</u>
	Grand Total	<u>\$44,350.73</u>

* Due to the indefinite time period the drums will be required to be staged, a rate per drum per week is provided.

T7XC111201.TOR\BID.LND

BID-2

GERAGHTY & MILLER, INC.

Respectfully Submitted:

CHEMICAL WASTE MANAGEMENT, INC.
ENRAC Division Midwest Region
CONTRACTOR

7250 West College Drive
Palos Heights, IL 60463
ADDRESS

Matthew Radek / Inc
SIGNATURE MATTHEW RADEK

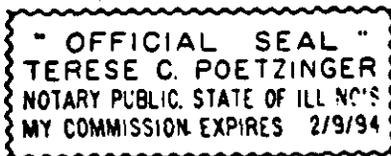
7/22/91
DATE

(CORPORATE SEAL) (not available at this time)

SWORN AND SUBSCRIBED BEFORE ME, THIS 22ND DAY OF July,
1991.

Terese C. Poetzinger
NOTARY PUBLIC

MY COMMISSION EXPIRES: 2-9-94



Bidder's Estimate of Work Schedule

	<u>* Start Date</u>	<u>End Date</u>
Mobilization	<u>8/19/91</u>	<u>8/20/91</u>
Area 1 Removal and Staging	<u>8/21/91</u>	<u>8/21/91</u>
Area 2 Removal and Staging	<u>8/22/91</u>	<u>8/22/91</u>
Area 3 Removal and Staging	<u>8/22/91</u>	<u>8/23/91</u>
Area 4 Removal and Staging	<u>8/23/91</u>	<u>8/23/91</u>
Sampling of Drums	<u>8/21/91</u>	<u>8/23/91</u>
Transportation and Disposal of Drums **	<u>9/09/91</u>	<u>9/10/91</u>
Demobilization	<u>8/23/91</u>	<u>8/24/91</u>

* Start Date assumes the following:

Bid due date: July 22, 1991
Award date: August 1, 1991
Notice to Proceed: August 19, 1991

** May vary based on the type of disposal that is required. Landfill is assumed. CWM-ENRAC is not assuming responsibility for the drums while they are awaiting disposal decisions.

PROPOSED SUBCONTRACTORS

The bidder further proposes that the following subcontracting firms or businesses will be awarded subcontracts for the portions of the work identified in the event that the bidder is awarded the Contract:

1. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

2. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

3. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

4. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

5. **NAME:** _____ **PHONE #** _____
ADDRESS: _____
SUBCONTRACTED ITEMS (2): _____

HEALTH AND SAFETY CERTIFICATION

The Contractor Chemical Waste Management, Inc., hereby certifies that the Contractor and its employees who will be engaged in working on or near the Torch Lake On-Land Drum Removal Project site are covered by, and participants in, a proper Health and Safety program which meets the requirements of applicable OSHA regulations for work in potentially hazardous areas as described in 29 CFR Part 1910.120 and other applicable federal, state, and local rules and regulations pertaining to health and safety requirements for work at the site.

C. J. Long
(Signature)

HEALTH / SAFETY MANAGER
(Title)

APPENDIX I

ANALYTICA QUOTATION



an Analytica Group company

18000 W. Highway 72, Golden, CO 80403, (303) 420-4449, (800) 873-8707, FAX: (303) 420-1434

July 17, 1991

Mr. Gary Kruger
Geraghty and Miller Environmental Services
75 East Wacker Drive
Suite 1100
Chicago, IL 60601

Re: Price Quotation for the Torch Lake Project
Analytica ID: C35891

Dear Gary:

Thank you for the opportunity to bid on the analytical support for your Torch Lake Project. The following pricing is bundled to include all glassware, freight both ways (Airborne #50576054) and considers the possibility of occasional difficult matrices.

Your sampling period (August 10-September 30) falls during our historical busy season. Consequently, the 3 working day turnaround option would be extremely difficult for Analytica to achieve. The 5 working day option is doable, but reality and "Murphy's Law for Labs" tells me that we may have a report or two that will slide 24 to 48 hours past the due date. With adequate notice (minimum of 1 week), the 7 working day option presents no significant problems for our laboratory.

If Analytica is selected for the project, your personal project manager will be Ms. Jeanne Hatcher. In addition, Scott Noland (Technical Director) will be assigned as your LabPartner™. Scott is a chemical engineer with 17 years of practical environmental experience and will be available to discuss technical issues or interpretations.

We look forward to providing you with a superior analytical product. You can expect a sense of urgency and a commitment to quality.

Sincerely,

Robert G. Elliott
Sales Manager

RGE/jad

cc: Linda Hale
Lynne Bidwell
Jeanne Hatcher
Scott Noland
Jim Santmyer
Kurt Finley



an Analytica Group company

18000 W. Highway 72, Golden, CO 80403, (303) 420-4449, (800) 873-8707, FAX: (303) 420-1434

GERAGHTY AND MILLER - CHICAGO

Mr. Gary Kruger

July 17, 1991

Client ID: Torch Lake Project

Analytica CSN: C35891

Quality Control: Geraghty and Miller Level IV

Sample Matrix: Solid, Semisolid, Oily Liquid

Date Samples Expected: August 10 - September 30, 1991

11 to 25 Samples

<u>Analysis</u>	<u>3 Working Day Turnaround</u>	<u>5 Working Day Turnaround</u>	<u>7 Working Day Turnaround</u>
Volatiles	\$486.00	\$405.00	\$324.00
BNA's	891.00	742.00	594.00
Ignitability	121.00	101.00	81.00
TCLP + TCLP Metals	391.00	325.00	261.00

26 to 50 Samples

<u>Analysis</u>	<u>3 Working Day Turnaround</u>	<u>5 Working Day Turnaround</u>	<u>7 Working Day Turnaround</u>
Volatiles	\$459.00	\$382.00	\$306.00
BNA's	841.00	701.00	561.00
Ignitability	114.00	95.00	76.00
TCLP + TCLP Metals	369.00	307.00	246.00

50 or More Samples

<u>Analysis</u>	<u>3 Working Day Turnaround</u>	<u>5 Working Day Turnaround</u>	<u>7 Working Day Turnaround</u>
Volatiles	\$432.00	\$360.00	\$288.00
BNA's	792.00	660.00	528.00
Ignitability	108.00	90.00	72.00
TCLP + TCLP Metals	348.00	289.00	232.00

No additional charge for difficult matrices.

APPENDIX I

GERAGHTY & MILLER INVOICES

MAY 21 1991

Project Name: _____ Date: _____

Gary Kruger

MAY 20, 1991
 INVOICE NO. 25047

C111201 Torch Lake

Costs captured on this invoice include the initial labor costs associated with the kick-off meeting conference call and follow-up on April 26, 1991.

PALL, WEISS, RIFKIND, WHITTON & GARRISON
 1285 AVENUE OF AMERICAS
 NEW YORK, N.Y. 10019-6064

PROFESSIONAL SERVICES FOR THE PERIOD ENDING APRIL 27, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
STAFF SCI/ENG II KRUGER, GARY	2.0	20.00	160.00
SR PROJ ADVISOR BARTELT, RICHARD E.	3.5	120.00	425.00
TOTAL	4.5		

PROFESSIONAL FEES 585.00

TOTAL THIS INVOICE 585.00

Please Remit To: P.O. Box 4834 • Church Street Station
 New York, New York 10261-4834 • (516) 249-7600
TERMS: Net 30 days. A 2% discount for professional fees only will be allowed on payment received within 20 days of invoice date. A charge of 1½% per month will be added on past due accounts.

PROJECT MANAGER



JUNE 24, 1991
 INVOICE NO. 37013 (REVISED)
 JOB NO. CI112.01

MR. STEVEN SHAPIRO
 THE HENLY GROUP, INC.
 LIBERTY LANE
 HAMPTON, NH 03842

JOB NO. CI112.05

PAUL WEISS/REMOVAL SUPPRT

PROFESSIONAL SERVICES FOR THE PERIOD ENDING JUNE 1, 1991.

PROFESSIONAL PERSONNEL	HOURS	RATE	AMOUNT
PROJ SCI/ENG II KRUGER, GARY	173.0	80.00	13,840.00
SCI/ENG II KLIMAZA, SUZANNE	2.0	59.00	118.00
SR PROJ ADVISOR BARTELT, RICHARD E.	66.0	170.00	11,220.00
TOTAL	241.0		
PROFESSIONAL FEES			25,178.00

REIMBURSABLE EXPENSES

AIR FAIR	2,641.00		
15.00% MARK-UP	396.15		
		3,037.15	

Please Remit To: Drawer #870
 Milwaukee, Wisconsin 53278-0870 • (414) 278-7742
 Geraghty & Miller labor



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 37013(REVISED)

JOB NO. CI112.01

2

CAR RENTAL	483.87	
15.00% MARK-UP	72.58	
		556.45
TRANSPORTATION	5.00	
15.00% MARK-UP	0.75	
		5.75
PERSONAL CAR MILAGE	54.30	
TOLLS, PARKING	44.30	
15.00% MARK-UP	6.65	
		105.25
GASOLINE	13.50	
15.00% MARK-UP	2.03	
		15.53
MOTEL/HOTEL	195.88	
15.00% MARK-UP	29.38	
		225.26
MEALS	55.66	
15.00% MARK-UP	8.35	
		64.01
TELEPHONE	42.75	
15.00% MARK-UP	6.41	
		49.16
REPRODUCTIONS	84.60	
15.00% MARK-UP	12.69	
		97.29
PHOTOS & MAPS	7.19	
15.00%	1.08	
		8.27

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 278-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts



JULY 22, 1991
 INVOICE NO. 38832 (REVISED)
 JOB NO. CI112.01

MR. STEVEN SHAPIRO
 THE HENLY GROUP, INC.
 LIBERTY LANE
 HAMPTON, NH 03842

PAUL WEISS/TORCH LAKE

JOB NO. CI112.01

PROFESSIONAL SERVICES FOR THE PERIOD ENDING JUNE 29, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
STAFF SCI/ENG II KRUGER, GARY	44.0	80.00	3,520.00
PROFESSIONAL FEES			3,520.00

REIMBURSABLE EXPENSES

AIRFARE	492.00		
15.00% MARK-UP	73.80		
		565.80	
CAR RENTAL	134.86		
15.00% MARK-UP	20.23		
		155.09	
PERSONNEL CAR MILAGE	12.00		
TOLLS & PARKING	24.00		
15.00% MARK-UP	3.60		
		39.60	

Please Remit To: Drawer #870
 Milwaukee, Wisconsin 53278-0870 • (414) 276-7742
 TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller) only will be allowed on payment.



INVOICE NO. 38832/REV
JOB NO. C11

MOTEL/HOTEL	47.08	
15.00 MARK-UP	7.06	
		54.14
MEALS	20.63	
15.00% MARK-UP	3.09	
		23.72
TELEPHONE	26.10	
15.00% MARK-UP	3.92	
		30.02
TOTAL		<u>868.37</u>
TOTAL THIS JOB		<u>4,388.37</u>

PAUL WEISS/REMOVAL SUPPORT

JOB NO. C1112.0

PROFESSIONAL SERVICES FOR THE PERIOD ENDING JUNE 29, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENGR I WILCZYNSKI, MICHAEL	<u>.5</u>	85.00	42.50
STAFF SCI/ENG II KRUGER, GARY	120.0	80.00	9,600.00
STAFF SCI/ENG I AUER, JAMES P.	1.5	75.00	112.50

Please Remit To: Drawer 8870

Milwaukee, Wisconsin 53278-0870 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller) only will be allowed on payment received.



INVOICE NO. 38832(REVISED)
 JOB NO. CI112.01

3

SCI/ENG II			
KLIMASZ, SUZANNE	1.0	59.00	59.00
SR PROJ ADVISOR			
BARTELT, RICHARD E.	8.5	170.00	1,445.00
CLERICAL			
BEJARANO, NHORA	2.0	38.00	76.00
FOSTER, LARINDA	2.5	38.00	95.00
	136.0		
PROFESSIONAL FEES			11,430.00

REIMBURSABLE EXPENSES

SHIPPING	15.50		
15% MARK-UP	2.33		
		17.83	
IN-HOUSE REPRODUCTION	3.40	3.40	
TOTAL			21.23
TOTAL THIS JOB			<u>11,451.23</u>

INVOICE SUMMARY

PROFESSIONAL FEES	14,950.00
EXPENSES	<u>889.60</u>
INVOICE TOTAL	<u>15,839.60</u>



AUGUST 20, 1991
INVOICE NO. 40807 (REVISED)
JOB NO. CI112.01

MR. STEVEN SHAPIRO
THE HENLY GROUP, INC.
LIBERTY LANE
HAMPTON, NH 03842

PAUL WEISS/TORCH LAKE

JOB NO. CI112.01

PROFESSIONAL SERVICES FOR THE PERIOD ENDING JULY 29, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I			
KRUGER, GARY	8.0	85.00	680.00
PROFESSIONAL FEES			680.00

REIMBURSABLE EXPENSES

REPRODUCTIONS	20.16		
15.00% MARK-UP	3.02		
		23.18	
PUBLICATIONS	336.85		
15.00% MARK-UP	50.53		
		387.38	

TOTAL 410.56

TOTAL THIS JOB 1,090.56

Please Remit To: Drawer #870
Milwaukee, Wisconsin 53278-0870 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts

INVOICE NO. 40807(REVISED)
JOB NO. CI112.01
2
PAUL WEISS/FIELD WORK
JOB NO. CI112.05
PROFESSIONAL SERVICES FOR THE PERIOD ENDING JULY 29, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENGR I KRUGER, GARY	136.5	85.00	11,602.50
SR PROJ ADVISOR BARTELT, RICHARD E.	6.0	170.00	1,020.00
CLERICAL			
FOSTER, LACHERYL	.5	38.00	19.00
FOSTER, LARINDA	5.0	38.00	<u>190.00</u>

PROFESSIONAL FEES
12,831.50
REIMBURSABLE EXPENSES

AIRFARE	803.00	
15% MARK-UP	-120.90	
		926.90
CAR RENTAL	61.98	
15% MARK-UP	9.30	
		71.28
TRANSPORTATION	1.25	
15% MARK-UP	.19	
		1.44

Please Remit To: Drawer #870
Milwaukee, Wisconsin 53278-0870 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 40807(REVISED)
JOB NO. CI112.01
3

PERSONAL CAR MILEAGE	24.00	
TOLLS, PARKING	24.00	
15% MARK-UP	3.60	51.60
MOTEL/HOTEL	54.00	
15% MARK-UP	8.11	62.17
MEALS	7.98	
15% MARK-UP	1.20	9.18
TELEPHONE	29.06	
15% MARK-UP	4.36	33.42
PHOTOS & MAPS	28.40	
15% MARK-UP	4.26	32.66
SHIPPING	632.75	
15% MARK-UP	94.91	727.66
IN-HOUSE REPRODUCTION		639.10
TOTAL		
TOTAL THIS JOB		<u>2,555.41</u>
INVOICE SUMMARY		<u>15,386.91</u>
PROFESSIONAL FEES	13,511.50	
EXPENSES	<u>2,965.97</u>	
	<u>16,477.47</u>	

97700000/0000.3

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 378-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date & shall
1 1/2% per month will be added.



SEPTEMBER 21, 1991
 INVOICE NO. 42746 (REVISED)
 JOB NO. CI112.01

MR. STEVEN SHAPIRO
 THE HENLY GROUP, INC.
 LIBERTY LANE
 HAMPTON, NH 03842

PAUL WEISS/TORCH LAKE

JOB NO. CI112.01

PROFESSIONAL SERVICES FOR THE PERIOD ENDING AUGUST 31, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG II MARIAN, DOUGLAS F.	12.5	90.00	1,125.00
PROJ SCI/ENG I KRUGER, GARY	43.0	85.00	3,655.00
SCI/ENG III KLIMASZ, SUZANNE	32.0	67.00	<u>2,144.00</u>
	45.0		

PROFESSIONAL FEES

6,924.00

REIMBURSABLE EXPENSES

TRANSPORTATION	5.00		
15.00% MARK-UP	.75		
		5.75	
REPRODUCTIONS	240.05		
15.00% MARK-UP	36.01		
		276.06	

Please Remit To: Drawer #670
 Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
 TERMS: Net 30 days. A 2% discount for professional services.



INVOICE NO. 42746(REVISED)
JOB NO. CI112.01
2

PUBLICATIONS	64.04		
15.00% MARK-UP	9.61	73.65	
TOTAL		355.46	<u>355.46</u>
TOTAL THIS JOB			<u>7,279.46</u>

PAUL WEISS/FIELD WORK

JOB NO. CI112.02

PROFESSIONAL SERVICES FOR THE PERIOD ENDING AUGUST 31, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENGR I KRUGER, GARY	77.0	85.00	6,545.00
SR PROJ ADVISOR BARTELT, RICHARD E.	3.0	170.00	510.00
CLERICAL			
BEJARANO, NHORA	4.0	38.00	152.00
FOSTER, LARINDA	1.0	38.00	38.00
ROBISON, SUE A.	.5	38.00	19.00
	5.5		
PROFESSIONAL FEES			7,264.00

Please Remit To: Drawer #870

Milwaukee, Wisconsin 53278-0870 • (414) 278-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of

CONSULTANTS
SUBCONTRACTOR 15% OR
AP 10091 8/31 ENVIRONMENTAL & MARINE SVCS 56,568.00
AP 10092 9/23 ENVIRONMENTAL & MARINE SVCS 88,432.00
15% OVERRIDE 21,750.00
CONSULTANT 166,750.00
PROFESSIONAL SERVICES TOTAL 174,014.00
REIMBURSABLE EXPENSES

AIRFARE	361.00	
15% MARK-UP	54.15	
		415.15
CAR RENTAL	251.43	
15% MARK-UP	37.71	
		289.14
TRANSPORTATION	21.00	
15% MARK-UP	3.15	
		24.15
PERSONAL CAR MILEAGE	12.00	
GASOLINE	8.00	
15% MARK-UP	1.20	
		21.20
MOTEL/HOTEL	168.54	
15% MARK-UP	25.28	
		193.82
MEALS	71.70	
15% MARK-UP	10.76	
		82.46

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1 1/4% per month will be added on past due accounts



INVOICE NO. 42746(REVISED)

JOB NO. CI112.01

4

FIELD SUPPLIES	27.54	
15% MARK-UP	4.13	
		31.67
TELEPHONE	56.46	
15% MARK-UP	8.47	
		64.93
REPRODUCTIONS	50.00	
15% MARK-UP	7.50	
		57.50
SHIPPING	100.52	
15% MARK-UP	15.08	
		115.60
IN-HOUSE REPRODUCTION		108.20
		<u>1,403.82</u>
TOTAL THIS JOB		<u>175,417.82</u>

PAUL WEISS/REPORT REQMTS

JOB NO. CI112.03

PROFESSIONAL SERVICES FOR THE PERIOD ENDING AUGUST 31, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I			
KRUGER, GARY	13.0	85.00	1,105.00
PROFESSIONAL FEES			<u>1,105.00</u>
TOTAL THIS JOB			<u>1,105.00</u>

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1 1/2% per month will be added on past due accounts



INVOICE NO. 42746(REVISED)
JOB NO. CI112.01
5

PAUL WEISS/RISK ASSMT RVW

JOB NO. CI112.04

PROFESSIONAL SERVICES FOR THE PERIOD ENDING AUGUST, 31, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	.5	85.00	42.50
PROFESSIONAL FEES			<u>42.50</u>
TOTAL THIS JOB			<u>42.50</u>

TORCH LAKE/REMOVAL SUPPRT

JOB NO. CI112.05

PROFESSIONAL SERVICES FORTH PERIOD ENDING AUGUST 31, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ ENG I KRUGER, GARY	<u>58.0</u>	85.00	4,930.00
PROFESSIONAL FEES			<u>4,930.00</u>
TOTAL THIS JOB			<u>4,930.00</u>

INVOICE SUMMARY

PROFESSIONAL FEES 20,265.50

Please Remit To: Drawer 8670
Milwaukee, Wisconsin 53278-0670 • (414) 278-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1 1/4% per month will be added on next due accounts

OCTOBER 5, 1991
INVOICE NO. 43707 (DUPLICATE)
JOB NO. CI112.01

MR. STEVEN SHAPIRO
THE HENLY GROUP, INC.
LIBERTY LANE
HAMPTON, NH 03842

PROFESSIONAL SERVICES FOR THE PERIOD ENDING SEPTEMBER 28, 1991.

PAUL WEISS/FIELD WORK

JOB NO. CI112.02

CONSULTANTS

SUBCONTRACTOR 15% OR	
AP 10919 9/26 CHEM WASTE MGMT	36,694.15
15.00% OVERRIDE	<u>5,504.12</u>

TOTAL THIS JOB \$42,198.27

INVOICE TOTALS

TOTAL CONSULTANTS 42,198.27

TOTAL INVOICE 42,198.27

9/17/91EMPACChel.lpr

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1 1/4% per month will be added on past due accounts

PROJECT MANAGER

OCTOBER 21, 1991
 INVOICE NO. 44884 (REVISED)
 JOB NO. CI112.01

MR. STEVEN SHAPIRO
 THE HENLY GROUP, INC.
 LIBERTY LANE
 HAMPTON, NH 03842

PAUL WEISS/TORCH LAKE

JOB NO. CI112.01

PROFESSIONAL SERVICES FOR THE PERIOD ENDING SEPTEMBER 28, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PRIN SCI/ENG II BARR, KELTON D.	1.0	125.00	125.00
PROJ SCI/ENG I KRUGER, GARY	8.0	85.00	680.00
SCI/ENG III KLIMASZ, SUZANNE	59.0	67.00	3,953.00
SR PROJ ADVISOR BARTELT, RICHARD E.	2.5	170.00	<u>425.00</u>
TOTAL	70.5		
PROFESSIONAL FEES			5,183.00

REIMBURSABLE EXPENSES

TELEPHONE	35.85	
15.00% MARK-UP	5.38	
SUBTOTAL		41.23

Please Remit To: Drawer #670
 Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
 only will be allowed on payment received within 20 days of invoice date. A charge of
 1½% per month will be added on past due accounts

PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 44884 (REVISED)

JOB NO. CI112.01

2

REPRODUCTIONS	30.80	
15.00% MARK-UP	4.62	
SUBTOTAL		35.42
PUBLICATIONS	88.00	
15.00% MARK-UP	13.20	
SUBTOTAL		101.20
SHIPPING	80.75	
15.00% MARK-UP	12.11	
SUBTOTAL		92.86
IN-HOUSE REPRODUCTION	10.50	
TOTAL	281.21	<u>281.21</u>
TOTAL THIS JOB		<u>5,464.21</u>

PAUL WEISS/TORCH LAKE

JOB NO. CI112.02

PROFESSIONAL SERVICES FOR THE PERIOD ENDING SEPTEMBER 28, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENGR I KRUGER, GARY	185.0	85.00	15,725.00
STAFF SCI/ENG I AUER, JAMES P.	15.0	75.00	1,125.00
SR SCI/ENG II TANAKA, JOHN C.	3.0	105.00	315.00
SR PROJ ADVISOR BARTELT, RICHARD E.	5.0	170.00	850.00

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1½% per month will be added on past due accounts

PROJECT MANAGER


**GERAGHTY
& MILLER, INC.**
Environmental Services
INVOICE NO. 44884 (REVISED)
JOB NO. CI112.01
3

CLERICAL			
WESSEL, BAMBI	0.5	38.00	<u>19.00</u>
TOTAL	208.5		
PROFESSIONAL FEES			18,034.00
REIMBURSABLE EXPENSES			
AIRFARE	1,736.00		
15% MARK-UP	260.40		
SUBTOTAL		1,996.40	
CAR RENTAL	709.62		
15% MARK-UP	106.44		
SUBTOTAL		816.06	
TRANSPORTATION	72.00		
15% MARK-UP	10.80		
SUBTOTAL		82.80	
PERSONAL CAR MILEAGE	45.00		
TOLLS, PARKING	74.70		
15% MARK-UP	11.21		
SUBTOTAL		85.91	
GASOLINE	23.00		
15% MARK-UP	3.45		
SUBTOTAL		26.45	
MOTEL/HOTEL	538.76		
15% MARK-UP	80.81		
SUBTOTAL		619.57	
MEALS	229.97		
15% MARK-UP	34.50		
SUBTOTAL		264.47	
FIELD SUPPLIES	64.57		
15% MARK-UP	9.69		
SUBTOTAL		74.26	
REPRODUCTIONS	3.12		
15% MARK-UP	0.47		
SUBTOTAL		3.59	

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts
PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 44884 (REVISED)
JOB NO. CI112.01

4

EQUIPMENT RENTAL	315.00	
15% MARK-UP	47.25	
SUBTOTAL		362.25
FREIGHT AND MESSENGER	303.94	
15% MARK-UP	45.59	
SUBTOTAL		349.53
PHOTOS & MAPS	32.58	
15% MARK-UP	4.89	
SUBTOTAL		37.47
TOTAL	4,763.76	<u>4,763.76</u>
TOTAL THIS JOB		<u>22,797.76</u>

PAUL WEISS/TORCH LAKE

JOB NO. CI112.03

PROFESSIONAL SERVICES FOR THE PERIOD ENDING SEPTEMBER 28, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PRIN SCI/ENG I			
BARTELT, RICHARD E.	1.0	170.00	170.00
TOTAL THIS JOB			<u>170.00</u>

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts

PROJECT MANAGER



INVOICE NO. 44884 (REVISED)
JOB NO. CI112.01
5

PAUL WEISS/TORCH LAKE

JOB NO. CI112.04

PROFESSIONAL SERVICES FOR THE PERIOD ENDING SEPTEMBER 28, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PRIN SCI/ENG I JONES, FRANK	29.0	112.00	3,248.00
PROJ SCI/ENG I KRUGER, GARY	5.0	85.00	425.00
SR PROJ ADVISOR BARTELT, RICHARD E.	1.5	170.0	<u>255.00</u>
TOTAL	35.5		
PROFESSIONAL FEES			<u>3,928.00</u>
TOTAL THIS JOB			<u>3,928.00</u>

PAUL WEISS/TORCH LAKE

JOB NO. CI112.05

PROFESSIONAL SERVICES FOR THE PERIOD ENDING SEPTEMBER 28, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
SR PROJ ADVISOR BARTELT, RICHARD E.	1.0	170.00	170.00
PROFESSIONAL FEES			<u>170.00</u>

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1½% per month will be added on past due accounts

PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**

Environmental Services

INVOICE NO. 44884 (REVISED)

JOB NO. CI112.01

6

TOTAL THIS JOB

170.00

INVOICE TOTALS

PROFESSIONAL FEES	27,485.00
TOTAL CONSULTANTS	
TOTAL EXPENSE	5,044.97
TOTAL FEE	
TOTAL INTEREST	<hr/>
	<u>32,529.97</u>

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Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1½% per month will be added on past due accounts

PROJECT MANAGER

**GERAGHTY
& MILLER, INC.**
Environmental Services

NOVEMBER 2, 1991
INVOICE NO. 45691
JOB NO. C1112.01

PAUL WEISS RIFKIND, WHARTON & BARRISON
1285 AVENUE OF AMERICAS
NEW YORK NY 10019-4064

SUBCONTRACTORS

PAULWEISS TORCH LAKE

JOB NO. C1112.02

SUBCONTRACTORS

CONSULTANTS

SUBCONTRACTOR 15% OR

APR 1987 10/21 ANALYTICA INC

20,893.00

15% OVERRIDE

3,133.95

TOTAL

24,026.95

TOTAL

24,026.95

24,026.95

SUBCONTRACTOR SERVICES TOTAL

24,026.95

TOTAL THIS JOB \$ 24,026.95

Please Remit To: P.O. Box 4834 • Church Street Station
New York, New York 10261-4834 • (516) 249-7800

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1 1/2% per month will be added on past due accounts

PROJECT MANAGER

INVOICE NO. 45691
JOB NO. C1112.01

INVOICE TOTALS

PROFESSIONAL FEES

TOTAL CONSULTANTS	24,026.95
TOTAL EXPENSE	
TOTAL FEE	
TOTAL INTEREST	

24,026.95

Please Remit To: P.O. Box 4834 • Church Street Station
New York, New York 10261-4834 • (516) 249-7600
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts

PROJECT MANAGER



NOVEMBER 18, 1991
INVOICE NO. 46143 (REVISED)
JOB NO. CI112.01

MR. STEVEN SHAPIRO
THE HENLY GROUP, INC.
LIBERTY LANE
HAMPTON, NH 03842

PAUL WEISS/TORCH LAKE

JOB NO. CI112.01

PROFESSIONAL SERVICES FOR THE PERIOD ENDING OCTOBER 26, 1991.

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	44.0	85.00	3,740.00
SCI/ENG III HUDSON, CASEY	3.0	67.00	201.00
KLIMASZ, SUZANNE	7.5	67.00	502.50
SR PROJ ADVISOR BARTELT, RICHARD E.	1.5	170.00	<u>255.00</u>
TOTAL	56.0		
PROFESSIONAL FEES			4,698.50

REIMBURSABLE EXPENSES

MEALS	34.18	
15.00% MARK-UP	5.13	
SUBTOTAL		39.31

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts

PROJECT MANAGER



INVOICE NO. 46143 (REVISED)
JOB NO. CI112.01
2

FIELD SUPPLIES	1.81	
15.00% MARK-UP	0.27	
SUBTOTAL		2.08
TELEPHONE	8.84	
15.00% MARK-UP	1.33	
SUBTOTAL		10.17
TOTAL	51.56	<u>51.56</u>
TOTAL THIS JOB		<u>4.750.06</u>

PAUL WEISS/FIELD WORK JOB NO. CI112.02

PROFESSIONAL SERVICES FOR THE PERIOD ENDING OCTOBER 26, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENGR I			
KRUGER, GARY	14.0	85.00	1,190.00
SR PROJ ADVISOR			
BARTELT, RICHARD E.	1.0	170.00	170.00
CLERICAL			
RUSSELL, LARINDA	1.0	38.00	<u>38.00</u>
TOTAL	16.0		
PROFESSIONAL FEES			1,398.00

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts

PROJECT MANAGER

REIMBURSABLE EXPENSES

TELEPHONE	110.66	
15% MARK-UP	16.60	
SUBTOTAL		127.26
FREIGHT AND MESSENGER	59.95	
15% MARK-UP	8.99	
SUBTOTAL		68.94
PHOTOS & MAPS	18.38	
15% MARK-UP	2.76	
SUBTOTAL		21.14
IN-HOUSE REPRODUCTION	111.75	
TOTAL	329.09	<u>329.09</u>
TOTAL THIS JOB		<u>1,727.09</u>

PAUL WEISS/REPORT REQMTS
JOB NO. CI112.03
PROFESSIONAL SERVICES FOR THE PERIOD ENDING OCTOBER 26, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I			
KRUGER, GARY	26.0	85.00	2,210.00
SR PROJ ADVISOR			
BARTELT, RICHARD E.	0.5	170.00	<u>85.00</u>
TOTAL	26.5		
PROFESSIONAL FEES			<u>2,295.00</u>
TOTAL THIS JOB			<u>2,295.00</u>

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts
PROJECT MANAGER

PAUL WEISS/RISK ASSMT RVW
JOB NO. CI112.04
PROFESSIONAL SERVICES FOR THE PERIOD ENDING OCTOBER 26, 1991.
PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PRIN SCI/ENG I JONES, FRANK	10.0	112.00	1,120.00
SR SCI/ENG I HUFF, DONALD	8.0	96.00	768.00
PROJ SCI/ENG I KRUGER, GARY	14.0	85.00	<u>1,190.00</u>
TOTAL	32.0		
PROFESSIONAL FEES			3,078.00

REIMBURSABLE EXPENSES

AIR FARE	1,096.00	
15% MARK-UP	164.40	
SUBTOTAL		1,260.40
TRANSPORTATION	30.00	
15% MARK-UP	4.50	
SUBTOTAL		34.50
PERSONAL CAR MILEAGE	16.50	
TOLLS, PARKING	16.75	
15% MARK-UP	2.51	
SUBTOTAL		19.26
MEALS	39.99	
15% MARK-UP	6.00	
SUBTOTAL		45.99

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1 1/4% per month will be added on past due accounts
PROJECT MANAGER



INVOICE NO. 46143 (REVISED)
JOB NO. CII12.01
5

TELEPHONE	1.72	
15% MARK-UP	0.26	
SUBTOTAL		1.98
TOTAL	1,378.63	<u>1,378.63</u>
TOTAL THIS JOB		<u>4,456.63</u>

INVOICE TOTALS

PROFESSIONAL FEES	11,469.50
TOTAL CONSULTANTS	
TOTAL EXPENSE	1,759.28
TOTAL FEE	
TOTAL INTEREST	<hr/>
	<u>13,228.78</u>

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Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1½% per month will be added on past due accounts

PROJECT MANAGER



DECEMBER 19, 1991
 INVOICE NO. 48066
 JOB NO. CI112.01

STEVE SHAPIRO
 THE HENLEY GROUP
 LIBERTY LANE
 HAMPTON, NH 03842

CC: MR. STEVEN G. SHAPIRO
 THE HENLEY GROUP, INC.
 LIBERTY LANE
 HAMPTON, NH 03842

PROFESSIONAL SERVICES FOR THE PERIOD ENDING NOVEMBER 30, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	59.5	85.00	5,057.50
SCI/ENG III KLIMASZ, SUZANNE	4.0	67.00	268.00
SR PROJ ADVISOR BARTELT, RICHARD E.	0.5	170.00	85.00
TOTAL	64.0		

PROFESSIONAL FEES 5,410.50

CONSULTANTS

SUBCONTRACTOR 15% DR			
AP 01641 11/06 ANALYTICA INC		414.00	
15.00% OVERRIDE		62.10	
SUBTOTAL		476.10	
TOTAL		476.10	476.10

Please Remit To: Drawer #670
 Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
 TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
 only will be allowed on payment received within 20 days of invoice date. A charge of
 1 1/2% per month will be added on past due accounts

PROJECT MANAGER


**GERAGHTY
& MILLER, INC.**
Environmental Services

 INVOICE NO. 48066
 JOB NO. CI112.01

PROFESSIONAL SERVICES TOTAL
5,886.60
REIMBURSABLE EXPENSES

AIR FARE	1,200.00	
15.00% MARKUP	180.00	
SUBTOTAL		1,380.00
CAR RENTAL	61.26	
15.00% MARKUP	9.19	
SUBTOTAL		70.45
PERSONAL CAR MILEAGE	28.00	
TOLLS, PARKING	55.00	
15.00% MARKUP	8.25	
SUBTOTAL		63.25
MOTEL/HOTEL	156.61	
15.00% MARKUP	23.49	
SUBTOTAL		180.10
MEALS	21.25	
15.00% MARKUP	3.19	
SUBTOTAL		24.44
TELEPHONE	163.43	
15.00% MARKUP	24.51	
SUBTOTAL		187.94
REPRODUCTIONS	225.60	
15.00% MARKUP	33.84	
SUBTOTAL		259.44
SHIPPING	31.25	
15.00% MARKUP	4.69	
SUBTOTAL		35.94
TOTAL	2,229.56	2,229.56

TOTAL THIS JOB * 8,116.16

Please Remit To: Drawer #670
 Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
 only will be allowed on payment received within 20 days of invoice date. A charge of
 1% per month will be added on past due accounts

PROJECT MANAGER



INVOICE NO. 48066
JOB NO. C1112.01

PAULWEISS/FIELD WORK

JOB NO. C1112.02

PROFESSIONAL SERVICES FOR THE PERIOD ENDING NOVEMBER 30, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	23.0	85.00	1,955.00
SR PROJ ADVISOR BARTELT, RICHARD E.	0.5	170.00	85.00
TOTAL	23.5		

PROFESSIONAL FEES

2,040.00

REIMBURSABLE EXPENSES

TELEPHONE	9.23		
15.00% MARKUP	1.38		
SUBTOTAL		10.61	
EQUIPMENT RENTAL	330.00		
15.00% MARKUP	49.50		
SUBTOTAL		379.50	
SHIPPING	23.25		
15.00% MARKUP	3.49		
SUBTOTAL		26.74	
TOTAL	416.85		416.85

TOTAL THIS JOB * 2,456.85

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts

PROJECT MANAGER



INVOICE NO. 48066
JOB NO. CI112.01

PAULWEISS/REPORT REQMTS

JOB NO. CI112.03

PROFESSIONAL SERVICES FOR THE PERIOD ENDING NOVEMBER 30, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, BARY	1.5	85.00	127.50
SR PROJ ADVISOR BARTELT, RICHARD E.	0.5	170.00	85.00
CLERICAL BEJARANO, NHORA	1.0	38.00	38.00
TOTAL	3.0		

PROFESSIONAL FEES 250.50

TOTAL THIS JOB \$ 250.50

PAULWEISS/RISK ASSMT RVW

JOB NO. CI112.04

PROFESSIONAL SERVICES FOR THE PERIOD ENDING NOVEMBER 30, 1991

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 278-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts

PROJECT MANAGER


**GERAGHTY
& MILLER, INC.**
Environmental Services

 INVOICE NO. 48066
 JOB NO. CI112.01

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PRIN SCI/ENG I JONES, FRANK	1.0	112.00	112.00
SR SCI/ENG I HUFF, DONALD	16.0	96.00	1,536.00
PROJ SCI/ENG I KRUGER, GARY	5.5	85.00	467.50
SR PROJ ADVISOR BARTELT, RICHARD E.	0.5	170.00	85.00
TOTAL	23.0		
PROFESSIONAL FEES			2,200.50
REIMBURSABLE EXPENSES			
TELEPHONE	0.87		
15.00% MARKUP	0.13		
SUBTOTAL		1.00	
TOTAL	1.00		1.00

TOTAL THIS JOB \$ 2,201.50
 =====

Please Remit To: Drawer #670
 Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
 only will be allowed on payment received within 20 days of invoice date. A charge of
 1% per month will be added on past due accounts

PROJECT MANAGER



INVOICE NO. 48066
JOB NO. CI112.01

INVOICE TOTALS

PROFESSIONAL FEES	9,901.50
TOTAL CONSULTANTS	476.10
TOTAL EXPENSE	2,647.41
TOTAL FEE	
TOTAL INTEREST	

13,025.01

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts

PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**
Environmental Services

JANUARY 18, 1992
INVOICE NO. 50239
JOB NO. CI112.01

STEVE SHAPIRO
THE HENLEY GROUP
LIBERTY LANE
HAMPTON, NH 03842

PROFESSIONAL SERVICES FOR THE PERIOD ENDING DECEMBER 28, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	8.0	85.00	680.00
SR PROJ ADVISOR BARTELT, RICHARD E.	1.0	170.00	170.00
TOTAL	9.0		

PROFESSIONAL FEES

850.00

REIMBURSABLE EXPENSES

TELEPHONE	7.17		
15.00% MARKUP	1.08		
SUBTOTAL		8.25	
REPRODUCTIONS	15.28		
15.00% MARKUP	2.29		
SUBTOTAL		17.57	
SHIPPING	29.50		
15.00% MARKUP	4.43		
SUBTOTAL		33.93	

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts

PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 50239
JOB NO. CI112.01

IN-HOUSE REPRODUCTION	0.15	
TOTAL	59.90	59.90

TOTAL THIS JOB \$ 909.90

PAULWEISS/FIELD WORK

JOB NO. CI112.02

PROFESSIONAL SERVICES FOR THE PERIOD ENDING DECEMBER 28, 1991

PROFESSIONAL PERSONNEL	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	15.5	85.00	1,317.50
PROFESSIONAL FEES			1,317.50
REIMBURSABLE EXPENSES			
TELEPHONE	23.23		
15.00% MARKUP	3.48		
SUBTOTAL		26.71	
EQUIPMENT RENTAL	330.00		
15.00% MARKUP	49.50		
SUBTOTAL		379.50	
SHIPPING	16.50		
15.00% MARKUP	2.48		
SUBTOTAL		18.98	
TOTAL	425.19		425.19

TOTAL THIS JOB \$ 1,742.69

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1 1/2% per month will be added on past due accounts

PROJECT MANAGER



INVOICE NO. 50239
JOB NO. CI112.01

PAULWEISS/RISK ASSMT RVW

JOB NO. CI112.01

PROFESSIONAL SERVICES FOR THE PERIOD ENDING DECEMBER 28, 1991

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PRIN SCI/ENG I SAGER, SHAWN L.	0.5	112.00	56.00
SR SCI/ENG I HUFF, DONALD	17.0	96.00	1,632.00
PROJ SCI/ENG I KRUGER, GARY	2.0	85.00	170.00
SCI/ENG II CUMMINGS, HENNEN	32.0	59.00	1,888.00
KOBLIS, KRISTIN	1.5	59.00	88.50
CLERICAL BEJARANO, NHORA	13.0	38.00	494.00
RUSSELL, LARINDA	1.0	38.00	38.00
TOTAL	67.0		
PROFESSIONAL FEES			4,366.50
REIMBURSABLE EXPENSES			
CO.-OWNED COMPUTER SERV	275.00		
IN-HOUSE REPRODUCTION	7.00		
TOTAL	282.00		282.00

TOTAL THIS JOB \$ 4,648.50
=====

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1% per month will be added on past due accounts
PROJECT MANAGER

INVOICE NO. 50239
JOB NO. C1112.01

INVOICE TOTALS

PROFESSIONAL FEES	6,534.00
TOTAL CONSULTANTS	
TOTAL EXPENSE	767.09
TOTAL FEE	
TOTAL INTEREST	

7,301.09
=====

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 278-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
only will be allowed on payment received within 20 days of invoice date. A charge of
1 1/4% per month will be added on past due accounts

PROJECT MANAGER

FEB 24 1992
**FEBRUARY 22, 1992
 INVOICE NO. 52583
 JOB NO. C1112.01**
**STEVE SHAPIRO
 THE HENLEY GROUP
 LIBERTY LANE
 HAMPTON, NH 03842**
PROFESSIONAL SERVICES FOR THE PERIOD ENDING FEBRUARY 1, 1992

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	7.5	85.00	637.50
CLERICAL KRUEGER, ROBERTA	0.5	38.00	19.00
TOTAL	8.0		

PROFESSIONAL FEES
656.50
REIMBURSABLE EXPENSES

TELEPHONE	41.73		
15.00% MARKUP	6.26		
SUBTOTAL		47.99	
SHIPPING	16.50		
15.00% MARKUP	2.48		
SUBTOTAL		18.98	
IN-HOUSE REPRODUCTION	16.50		
TOTAL	83.47		83.47

TOTAL THIS JOB \$ 739.97

Please Remit To: Drawer #670
Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
**TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
 only will be allowed on payment received within 20 days of invoice date. A charge of
 1% per month will be added on past due accounts**
PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 52583
JOB NO. CI112.01

PAULWEISS/FIELD WORK

JOB NO. CI112.02

PROFESSIONAL SERVICES FOR THE PERIOD ENDING FEBRUARY 1, 1992

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PROJ SCI/ENG I KRUGER, GARY	12.0	85.00	1,020.00
STAFF SCI/ENG I AUER, JAMES P.	37.0	75.00	2,775.00
TOTAL	49.0		

PROFESSIONAL FEES

3,795.00

REIMBURSABLE EXPENSES

AIR FARE	635.00		
15.00% MARKUP	95.25		
SUBTOTAL		730.25	
CAR RENTAL	188.57		
15.00% MARKUP	28.29		
SUBTOTAL		216.86	
PERSONAL CAR MILEAGE	14.00		
GASOLINE	16.00		
15.00% MARKUP	2.40		
SUBTOTAL		18.40	
MOTEL/HOTEL	162.64		
15.00% MARKUP	24.40		
SUBTOTAL		187.04	
MEALS	70.47		
15.00% MARKUP	10.57		
SUBTOTAL		81.04	

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts

PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 52583
JOB NO. C1112.01

TELEPHONE	8.98		
15.00% MARKUP	1.35		
SUBTOTAL		10.33	
EQUIPMENT RENTAL	330.00		
15.00% MARKUP	49.50		
SUBTOTAL		379.50	
SHIPPING	9.50		
15.00% MARKUP	1.43		
SUBTOTAL		10.93	
TOTAL	1,648.35		1,648.35

TOTAL THIS JOB \$ 5,443.35
=====

PAULWEISS/REPORT REQMTS

JOB NO. C1112.03

PROFESSIONAL SERVICES FOR THE PERIOD ENDING FEBRUARY 1, 1972

PROFESSIONAL PERSONNEL	HOURS	RATE	AMOUNT
PROJ SCI/ENG I			
KRUGER, GARY	2.5	85.00	212.50
PROFESSIONAL FEES			212.50
REIMBURSABLE EXPENSES			
SHIPPING	19.00		
15.00% MARKUP	2.85		
SUBTOTAL		21.85	
TOTAL	21.85		21.85

TOTAL THIS JOB \$ 234.35
=====

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts

PROJECT MANAGER


**GERAGHTY
& MILLER, INC.**
Environmental Services

 INVOICE NO. 52583
 JOB NO. CI112.01

PAULWEISS/RISK ASSMT RVW

JOB NO. CI112.04

PROFESSIONAL SERVICES FOR THE PERIOD ENDING FEBRUARY 1, 1992

PROFESSIONAL PERSONNEL

	HOURS	RATE	AMOUNT
PRIN SCI/ENG I JONES, FRANK	3.0	112.00	336.00
SR SCI/ENG I HUFF, DONALD	28.0	95.00	2,688.00
PROJ SCI/ENG I KRUGER, GARY	30.0	85.00	2,550.00
CLERICAL BEJARANO, NHORA	2.0	38.00	76.00
RUSSELL, LARINDA	4.0	38.00	152.00
TOTAL	67.0		

PROFESSIONAL FEES

3,802.00

REIMBURSABLE EXPENSES

TELEPHONE	0.57		
15.00% MARKUP	0.09		
SUBTOTAL		.66	
SHIPPING	31.50		
15.00% MARKUP	4.73		
SUBTOTAL		36.23	
TOTAL	36.89		36.89

TOTAL THIS JOB \$ 5,838.89

Please Remit To: Drawer #670
 Milwaukee, Wisconsin 53278-0670 • (414) 276-7742
TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor)
 only will be allowed on payment received within 20 days of invoice date. A charge of
 1 1/4% per month will be added on past due accounts

PROJECT MANAGER



**GERAGHTY
& MILLER, INC.**
Environmental Services

INVOICE NO. 52583
JOB NO. CI112.01

INVOICE TOTALS

PROFESSIONAL FEES	10,466.00
TOTAL CONSULTANTS	
TOTAL EXPENSE	1,790.56
TOTAL FEE	
TOTAL INTEREST	

	12,256.56
	=====

Please Remit To: Drawer #670

Milwaukee, Wisconsin 53278-0670 • (414) 276-7742

TERMS: Net 30 days. A 2% discount for professional fees (Geraghty & Miller labor) only will be allowed on payment received within 20 days of invoice date. A charge of 1% per month will be added on past due accounts

PROJECT MANAGER

APPENDIX K

SUBCONTRACTOR INVOICES

CI11202

INVOICE DATE 09/30/91
 INVOICE NO. 101467
 CUSTOMER NO. 004093

ANALYTICA
 -I-N-C-O-R-P-O-R-A-T-E-D-
 18000 WEST HIGHWAY 72
 GOLDEN, COLORADO 80403

(303) 420-4449

SOLD
TO: GERAGHTY & MILLER
 75 East Walker Drive
 Suite 1100
 Chicago, IL
 60601

SHIP
TO: GERAGHTY & MILLER
 75 East Walker Drive
 Suite 1100
 Chicago, IL
 60601

PAGE 1
 OF 1

F.O.B. POINT	CUSTOMER ORDER NO.	SHIP VIA	TERMS	SALESPERSON	OUR ORDER
	CI 11202		0/0 NET 30		006414

DESCRIPTION	UNIT	QUANTITY ORDERED	QUANTITY BACKORDERED	QUANTITY SHIPPED	UNIT PRICE	EXTENDED PRICE
LGN 9109-147 VOA'S (8240) TCL		1.00	0.00	1.00	306.000	306.00
LGN 9109-147 BNA'S (8270) TCL		1.00	0.00	1.00	561.000	561.00
LGN 9109-147 IGNITABILITY		1.00	0.00	1.00	76.000	76.00
LGN 9109-147 TCLP + 8 RCRA		1.00	0.00	1.00	246.000	246.00
LGN 9109-148 VOA'S (8240-TCL)		16.00	0.00	16.00	306.000	4896.00
LGN 9109-148 BNA'S (8270-TCL)		16.00	0.00	16.00	561.000	8976.00
LGN 9109-148 IGNITABILITY		16.00	0.00	16.00	76.000	1216.00
LGN 9109-148 TCLP + 8 RCRA		20.00	0.00	20.00	246.000	4920.00
LGN 9109-148 DELIVERY REIMBURSEMENT		1.00	0.00	1.00	0.000	-304.00
PAST DUE INVOICES WILL BE ASSESSED 1.5% PER MONTH						
					Sales Total	20893.00
					Trade Discount	0.00
					Freight	0.00
					Misc. Charges	0.00
					Sales Taxes	0.00

THANK YOU

Sales Total	20893.00
Trade Discount	0.00
Freight	0.00
Misc. Charges	0.00
Sales Taxes	0.00
TOTAL AMOUNT	20893.00



ENRAC Division - Midwest
 7250 W. College Drive
 Palos Heights, IL 60463
 708-361-7517

NET 10 DAYS

INTEREST ON ACCOUNTS RECEIVABLE IN EXCESS OF TWO PERCENT PER MONTH AT THE MAXIMUM RATE ALLOWED BY LAW AND NEVER LESS

Geraghty & Miller, Inc.

75 E. Wacker Drive, Suite 1100
 Chicago, IL 60601
 ATTN: Mr. Gary W. Kruger

CUSTOMER ACCOUNT NUMBER

91-07-782

INVOICE NUMBER	DATE	PAGE
E920307	3/12/92	1

SERVICE DATES: January 27 through January 31, 1992
PROJECT: Torch Lake on Land Drum Removal Effort, Houghton, Michigan

Staging of 51 Drums (15 Weeks)	(51 x 15)	Drums @	\$8.00 /drum/week	\$6,120.00
Disposal of Drums				
Disposal	97	Drums @	\$483.07	\$46,857.79
Disposal	4	Drums @	\$483.07	\$1,932.28
Stabilization	4	Drums @	\$125.00	\$500.00
State Hazardous Waste Taxes	0.86	Tons @	11.50	\$9.89
Incineration	2	Drums @	\$750.00	\$1,500.00
<u>Change Order 002</u>				
Analytical, transportation, and disposal of Liquid from Torch Lake				
Analytical Work	1	Lump sum @	\$1,950.00	\$1,950.00
Transportation/Disposal of 85 gallon drums to Controlled Waste	8	Drums @	\$113.00	\$904.00

REMIT TO
 ADDRESS

Chemical Waste Management, Inc.
 ENRAC Division - Midwest
 7250 W. College Drive
 Palos Heights, IL 60463

PLEASE PAY
 THIS AMOUNT

\$59,773.96



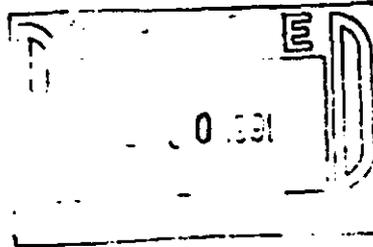
Chemical Waste Management, Inc.
 ENRAC Division - Midwest
 7250 W. College Drive
 Palos Heights, IL 60463
 708-381-7517

INVOICE

NET 10 DAYS

Geraghty & Miller, Inc.

75 E. Wacker Drive, Suite 1100
 Chicago, IL 60601
 ATTN: Mr. Gary W. Kruger



91-07-782

INVOICE NUMBER
 E910919 9/26/91 1

SERVICE DATES: September 17 through September 20, 1991
PROJECT: Torch Lake on Land Drum Removal Effort, Houghton, Michigan

Mobilization/Demobilization	1	Lump Sum @	\$14,904.23 each	\$14,904.23
Drum Removal and Overpacking	83	Drums @	\$235.68 each	\$19,561.44
Drum Sampling	16	Drums @	\$151.78 each	\$2,428.48
Staging of Drums (1 Week)	51	Drums @	\$8.00 /drum/week	\$408.00
Transfer lake water from 85 gallon overpacks into empty 110 gallon overpack drums	20	Drums @	\$42.10 each	\$842.00
Credit for overpacks supplied by others	29	Drums @	(\$50.00) each	(\$1,450.00)

TOTAL AMOUNT DUE

\$36,694.15

Note: The disposal of staged drums will be invoiced in a future period.

BIT TO
 JRESS

Chemical Waste Management, Inc.
 ENRAC Division - Midwest
 7250 W. College Drive
 Palos Heights, IL 60463

PLEASE PAY
 THIS AMOUNT

\$36,694.15

ENVIRONMENTAL & MARINE SERVICES

COMMERCIAL DIVING, MARINE CONSTRUCTION

and ENGINEERING

6472 CITY WEST PARKWAY

EDEN PRAIRIE, MN 55344

Client Name/Address GERAGHTY & MILLER, INC. 75 East Wacker Drive Suite 1100 Chicago, IL 60601 Attn: Accounts Payable	Date: 20 August 1991
	P.O. #: CI11201
	Invoice #: 91-009.1
	Job #: 91-009
	Terms: Net 10 Days

RE: GERAGHTY & MILLER, INC.
Torch Lake Superfund Site
Houghton County, Michigan

Shoreline Survey & Underwater Investigation of Drums.

Mobilization/Demobilization of personnel & equipment for Shoreline Survey and Underwater Investigation of Drums	\$ 8,250.00
Five Mile Shoreline Survey	\$ 25,162.00
Underwater Investigation of Drums @ \$234.00 per Drum	
Area One 24 Drums @ \$234.00/Drum	\$ 5,616.00
Area Two 60 Drums @ \$234.00/Drum	\$ 14,040.00
Provide Bonding for Project	\$ 3,500.00

INVOICE TOTAL \$ 56,568.00

APPROVED	
Project No.	CI11202
Date	8/26/91
Project Manager	G. Kevick

ENVIRONMENTAL & MARINE SERVICES

COMMERCIAL DIVING, MARINE CONSTRUCTION
and ENGINEERING
6472 CITY WEST PARKWAY
EDEN PRAIRIE, MN 55344

Client Name/Address GERAGHTY & MILLER, INC. 75 East Wacker Drive Suite 1100 Chicago, IL 60601 Attn: Accounts Payable	Date: 18 September 1991
	P.O. #: C11201
	Invoice #: 91-009.2
	Job #: 91-009
	Terms: Due Upon Receipt

RE: GERAGHTY & MILLER, INC.
Torch Lake Superfund Site
Houghton County, Michigan

Underwater Overpack and Removal of Drums, Underwater Sampling of Drums,
Underwater Investigation of Additional Drums, and Additional Services not
Included in Original Contract.

Mobilization/Demobilization of personnel & equipment for Underwater Overpack and Removal of Drums	\$ 8,200.00
<u>PCI</u> Underwater Overpack and Removal of Drums, 08 Drums @ \$1,719/Drum	\$ 13,752.00
Underwater Sampling of Drums, 6 Drums @ \$278/Drum	\$ 1,688.00
Underwater Investigation of Additional Drums (Lump Sum)	\$ 17,249.00
<u>AREA # 1</u> Underwater Overpack and Removal of Drums, 12 Drums @ \$1,719/Drum	\$ 20,628.00
Underwater Investigation of Additional Drums	\$ 1,100.00
PAGE TOTAL	\$ 62,617.00

	TOTAL FROM PAGE ONE	\$ 62,617.00
ADDITIONAL WORK;		
Crane Rental for Shore		\$ 4,200.00
Mobilization & Demobilization of Crane		\$ 3,300.00
Crane Operator;	54 hrs straight time @ \$48/hr	\$ 2,592.00
	41 hrs overtime @ \$63/hr	\$ 2,583.00
Fork Lift		\$ 2,650.00
Enclosed Truck Trailer for Barrel Storage		\$ 1,380.00
Removing and Clearing Trees for Area # 1 Set-up		\$ 1,325.00
Provide Overpacks		<u>\$ 7,785.00</u>

INVOICE TOTAL \$ 88,432.00

APPROVED

Project No. CI112.02

Date 9/19/91

Project Manager G. J. [Signature]